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BUREAU OF LAND MANAGEMENT

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

powder river coal

TRACT SUMMARIES

april 1983

ERRATA

POWDER RIVER COAL REGION TRACT SUMMARIES
of April 1983

Page	Correction
85	Timber Creek stripping ratio should be 2.7 to 1.
92	The entry under "Unsuitability Criteria" for Mount Logan indicates that the railroad would be moved. Later information is included on page 26 of the Mount Logan tract profile, which reads as follows: "An area unsuitable for mining would extend 100 feet beyond the existing right-of-way for the Burlington Northern main line." Therefore, the railroad would not be moved.
140 and 146	These two pages were inadvertently exchanged during production of the document. The material on page 140 applies to Northwest Otter Creek; it should appear on page 146. The material on page 146 applies to the Wolf Mountain Maintenance tract; it should appear on page 140.

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POWDER RIVER COAL REGION

TRACT SUMMARIES

WYOMING

Ash Creek
Youngs Creek
Hidden Water
Kumor Draw
Scotty Draw
Twentymile Butte
Bitter Creek
Rockpile
Wildcat
Calf Creek
Hay Creek
Donkey Creek
Timber Creek
Mount Logan
Kintz Creek
Thundercloud
Roundup
Porcupine
Rochelle Hills
Ridgerunner

MONTANA

Mud Springs
Wolf Mountain Maintenance
Northwest Otter Creek
Ashland (Decker-Birney)
Colstrip Area C
Colstrip Maintenance
Hanging Woman Creek
Downey Coulee
North Decker I
North Decker II
Spring Creek

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Maxwell T. Lieurance

April 1983

Maxwell T. Lieurance
Wyoming State Director

Bureau of Land Management
U.S. Department of the Interior

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INTRODUCTION

This report summarizes pertinent information on and consequences of leasing and developing federal coal reserves in 31 tracts in the Powder River coal region of southeastern Montana and northeastern Wyoming. These tracts were identified in response to 55 expressions of interest in leasing, which were submitted by coal industry representatives. Thirty-three of those expressions were received following calls for expressions of interest in 1982; the others were from the previous lease sale.

All of these tracts are being evaluated for potential federal coal leasing in a coal lease sale scheduled by the Secretary of the Interior for August 1984. The locations of the tracts are shown on maps 1 through 5.

Under the direction of the Powder River Regional Coal Team, which is made up of federal, state, and local officials, the tracts were established by Site-Specific Analysis Branch and the Resource Evaluation Branch of the Bureau of Land Management. The latter branch formerly was part of the Minerals Management Service.

ANALYSIS OF THE TRACTS

The initial phases of the federal coal management program include the identification and analysis of individual tracts containing federal coal with high to moderate potential for development. A tract summary report, which gives detailed coal facts on the specific coal reserve, and a site-specific analysis, which covers environmental facts, are prepared for each tract. These two documents are combined as a "tract profile" for each tract being considered.

The Forest Supervisor's Office of the Medicine Bow National Forest prepared the site-specific analyses for five tracts on the Thunder Basin National Grasslands. Analyses for the other tracts were prepared by the Bureau of Land Management. This report, which was prepared by the BLM, summarizes the information in the tract profile documents.

Coal produced from the Powder River region has historically been transported by rail to Midwestern and Southern markets, where it is used primarily for steam generation. There are some exceptions—the Colstrip, Wyodak, Dave Johnston, and Gray Rocks electric power generation plants are close to or adjacent to mines in this region.

SELECTION OF TRACTS

The Powder River Regional Coal Team will begin in May 1983 to rank and group selected tracts into alternative leasing levels for the 1984 lease sale. These groupings of tracts will form the basis for alternatives in a regional environmental impact statement to be prepared during 1983. The summary of analyses presented in this report represents an important step in a lengthy evaluation process that will conclude with the final decision on federal coal leasing within the region.

Of the 31 tracts currently being evaluated, 21 would require the opening of new mines. One of these 21 would be specifically earmarked for small business. The remaining 10 tracts would be leased to maintain production or prevent the bypass of federal coal at an ongoing mining operation.

Approximately 7.6 billion tons of recoverable federal coal lie within the areas being evaluated. State and private coal adjacent to or within the proposed tracts brings the total recoverable reserves to approximately 9.2 billion tons.

The major purposes of this summary are (1) to acquaint the public with key issues and consequences of the leasing and development of federal coal reserves so that members of the public may offer comments to the Powder River Regional Coal Team on ranking and selection of the tracts, and (2) to provide a concise summary of information about the tracts for Regional Coal Team use.

TRACT PROFILE ASSUMPTIONS

In the analysis and preparation of the two types of reports, a number of standard assumptions were made to provide a basis for impact analysis. They are as follows:

— Proper mining and reclamation would be carried out according to existing state and federal regulations.

— Analysis is based on a "worst case" situation; that is, the actual impacts felt would not be greater than the impacts addressed. This concept applies when the term "total tract" is used. "Total tract" means a tract of coal of various ownerships (federal, state, private) that can be mined in a logical manner.

— Consumption of the coal would be offsite and predominantly out of the region, with the possible exception of that from the Mud Springs tract.

— The present mining operations used in the area and the present state-of-the-art techniques would be used to develop this tract.

— The minimum bed thickness used was 5 feet.

— As a general rule, a maximum ratio of 10 feet of overburden per 1 foot of coal and a maximum overburden depth of 300 feet were used as guidelines for calculating the in-place coal tonnage.

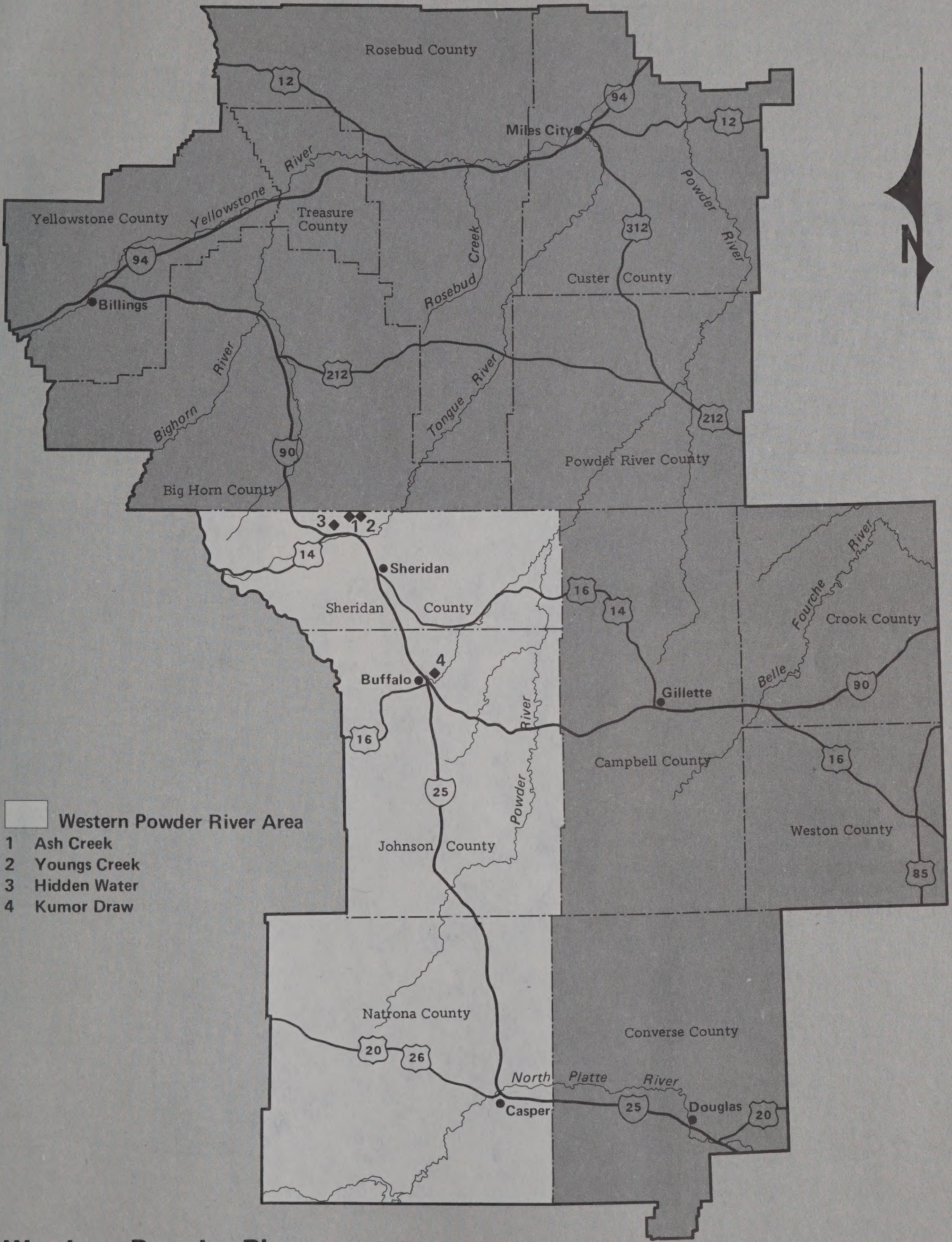
— A recovery factor of 90% was used in calculating recoverable reserves, except for some tracts delineated for a previous sale, where 85% was used. The recovery factor used in calculation is shown on the summary charts in this document.

— "Surface-mined acres" are the acres that are underlain by coal. Other acres not underlain by coal but within the tract boundaries were not counted as being disturbed, except where an area for facilities was provided. This approach results in some tracts appearing to be quite large, while actual disturbance is far less than the entire tract.

— The maximum number of acres that would be removed from agricultural production at any one time includes the acreage that would be occupied by mine facilities, the land actually being mined, and land that would be in the process of reclamation. A six-year reclamation period is assumed, after which the reclaimed land would be stabilized and available for its previous use. Full restoration of the land and its vegetation to the premining condition would require a longer time.

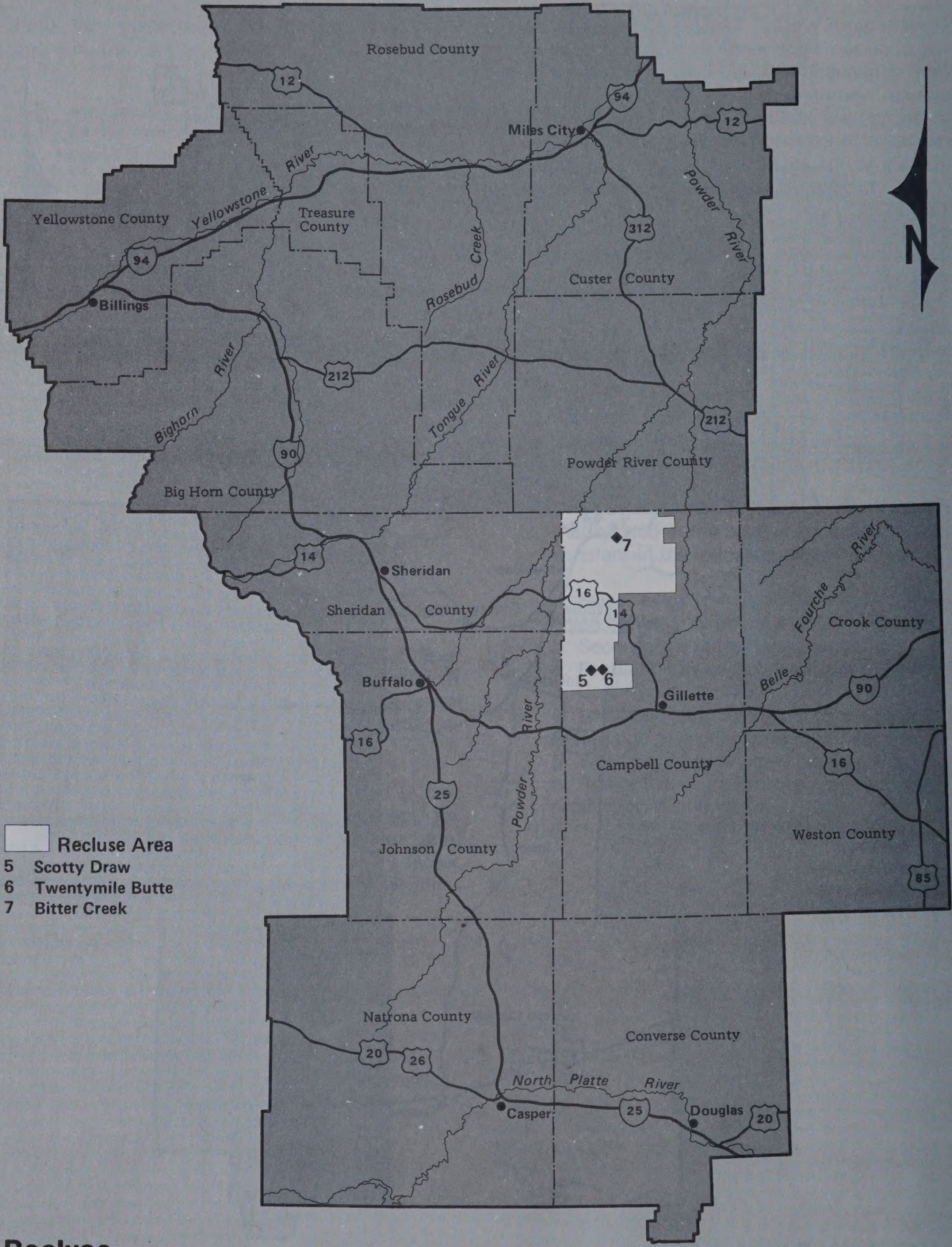
— It is assumed that ratios and relationships that existed in the base years would remain constant in the following areas:

a. Sales, employment, and income relationships between sectors
b. Secondary employment distributions
c. Population to employment ratios
d. Community facilities to population ratios
e. Local per capita expenditures
f. Revenue to production ratios
g. Sales tax to mine employment ratios
h. Agricultural inventory, price, cost, production relationships


Rosebud County
Yellowstone County
Treasure County
Custer County
Big Horn County
Powder River County
Sheridan County
Johnson County
Campbell County
Crook County
Weston County
Natrona County
Converse County
Miles City
Billings
Sheridan
Buffalo
Gillette
Casper
Douglas
Yellowstone River
Bighorn River
Rosebud Creek
Tongue River
Powder River
Belle Fourche River
North Platte River
12
94
312
212
90
14
16
25
20
26
85
N
1
2
3
4

▭ Western Powder River Area
1 Ash Creek
2 Youngs Creek
3 Hidden Water
4 Kumor Draw

Western Powder River
Tract Location Map


Rosebud County
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Yellowstone River
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Treasure County
Powder River
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Billings
Rosebud Creek
Custer County
Bighorn River
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Tongue River
212
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Powder River County
Big Horn County
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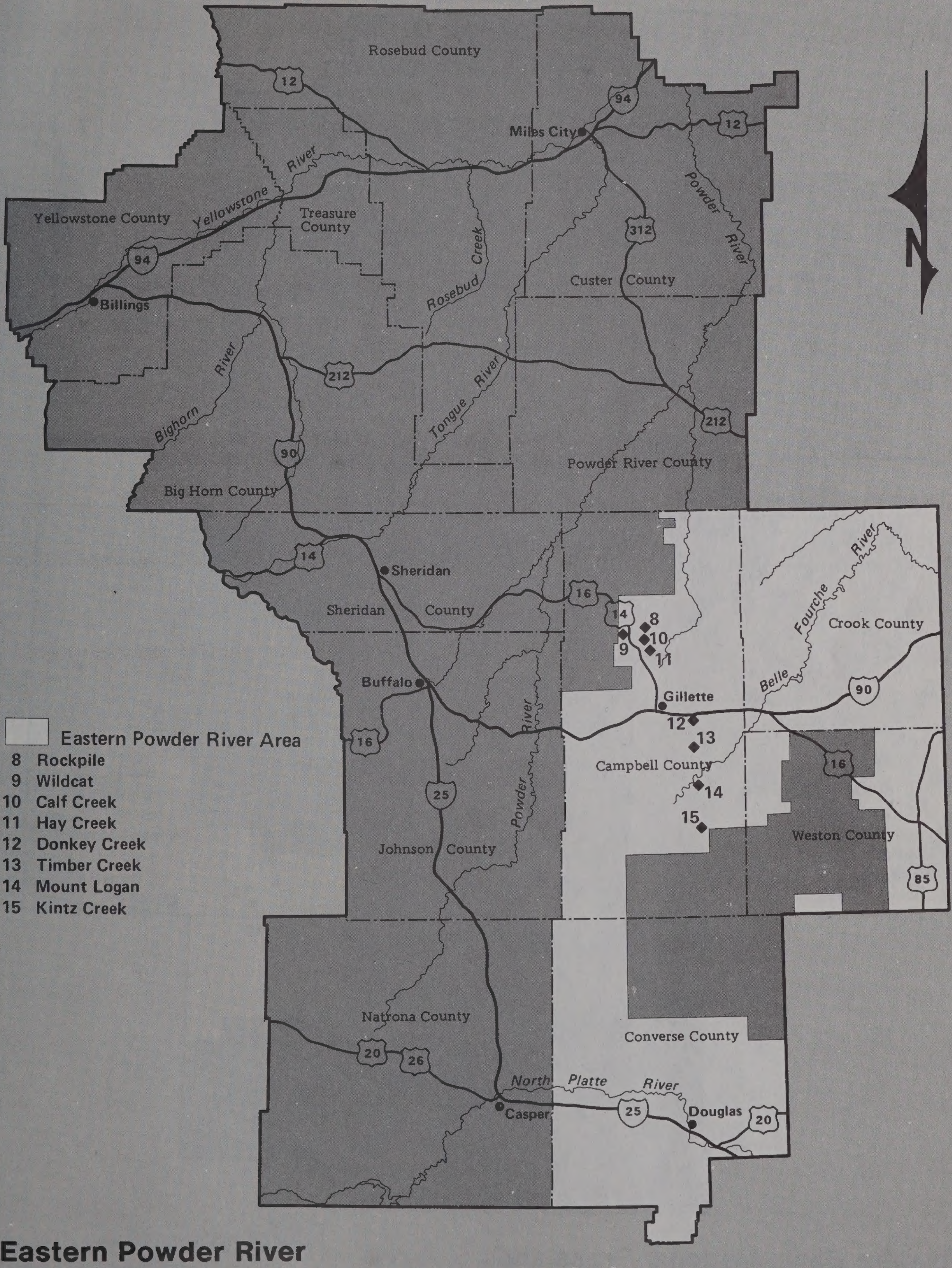
Sheridan
16
14
Sheridan County
Belle Fourche River
Crook County
Buffalo
5 6
Gillette
90
16
Powder River
Campbell County
16
25
Recluse Area
5 Scotty Draw
6 Twentymile Butte
7 Bitter Creek
Johnson County
Weston County
85
Natrona County
Converse County
20
26
North Platte River
Casper
25
Douglas
20
N

Recluse
Tract Location Map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Custer County
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Bighorn River
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Gillette
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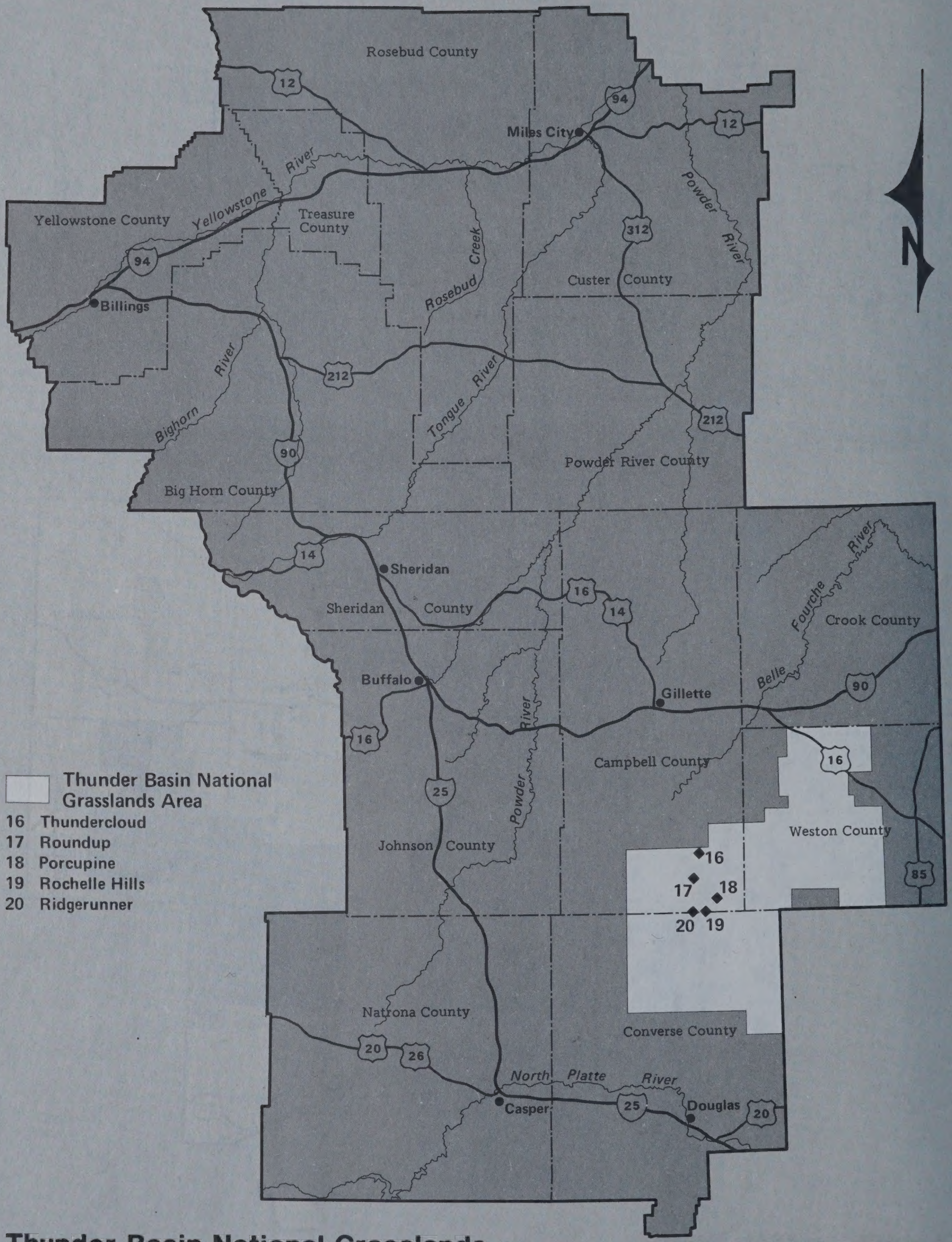
15

▢ Eastern Powder River Area

8	Rockpile
9	Wildcat
10	Calf Creek
11	Hay Creek
12	Donkey Creek
13	Timber Creek
14	Mount Logan
15	Kintz Creek

Eastern Powder River

Tract Location Map


Rosebud County
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Miles City
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Yellowstone County
Yellowstone River
Treasure County
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Rosebud Creek
Custer County
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Billings
Bighorn River
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Tongue River
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Powder River County
Big Horn County
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Sheridan
Sheridan County
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Belle Fourche River
Crook County
Buffalo
Gillette
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Powder River
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Campbell County
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Weston County
Johnson County
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Natrona County
Converse County
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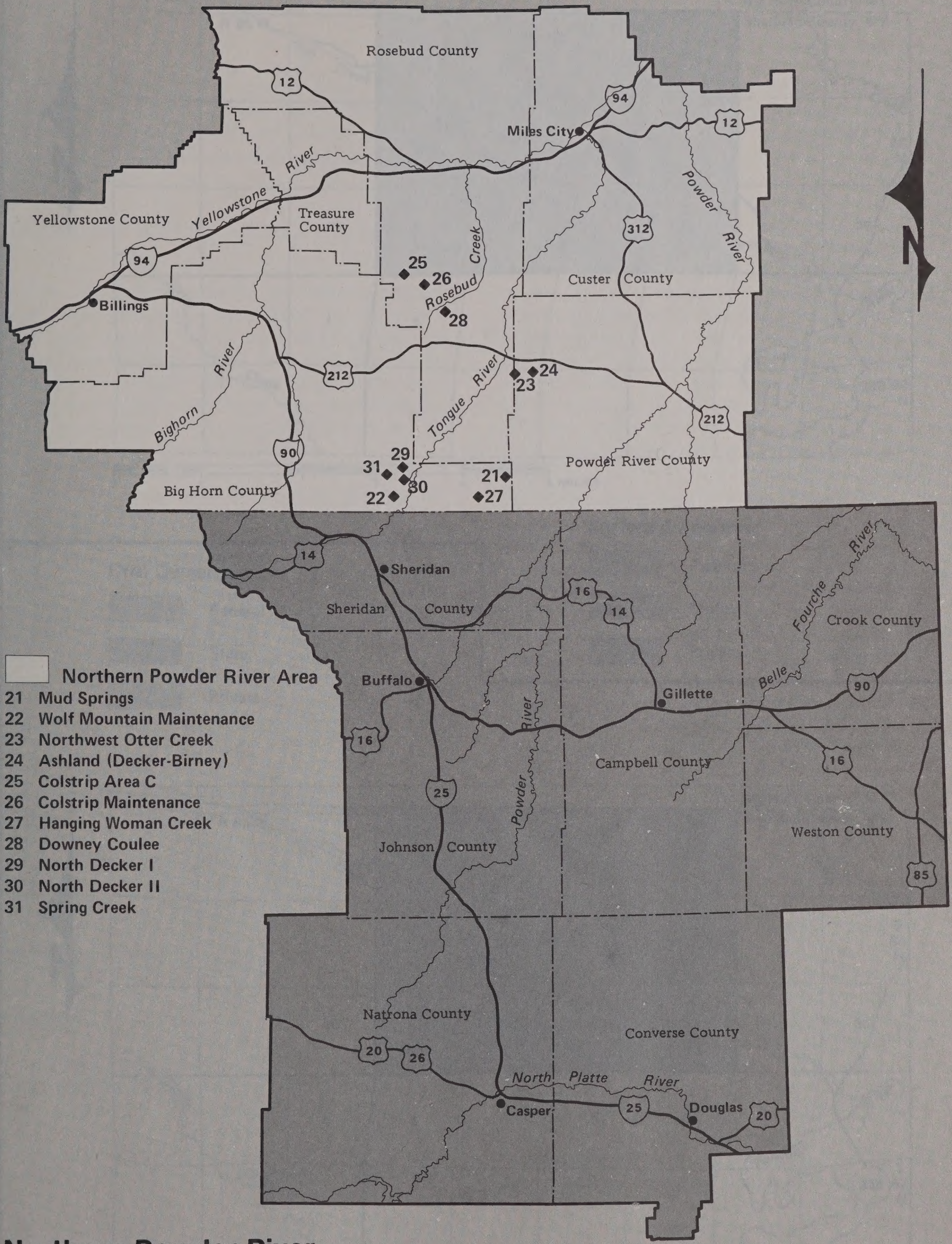
26
North Platte River
Casper
25
Douglas
20
N
Thunder Basin National Grasslands Area
16 Thundercloud
17 Roundup
18 Porcupine
19 Rochelle Hills
20 Ridgerunner

Thunder Basin National Grasslands

Tract Location Map


Rosebud County
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Miles City
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River
Yellowstone
Yellowstone County
Treasure County
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Billings
Powder River
312
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26
Rosebud Creek
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Custer County
River
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Tongue River
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Bighorn River
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Big Horn County
Powder River County
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Sheridan
Sheridan County
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Belle Fourche River
Crook County
Buffalo
Gillette
90
Powder River
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Campbell County
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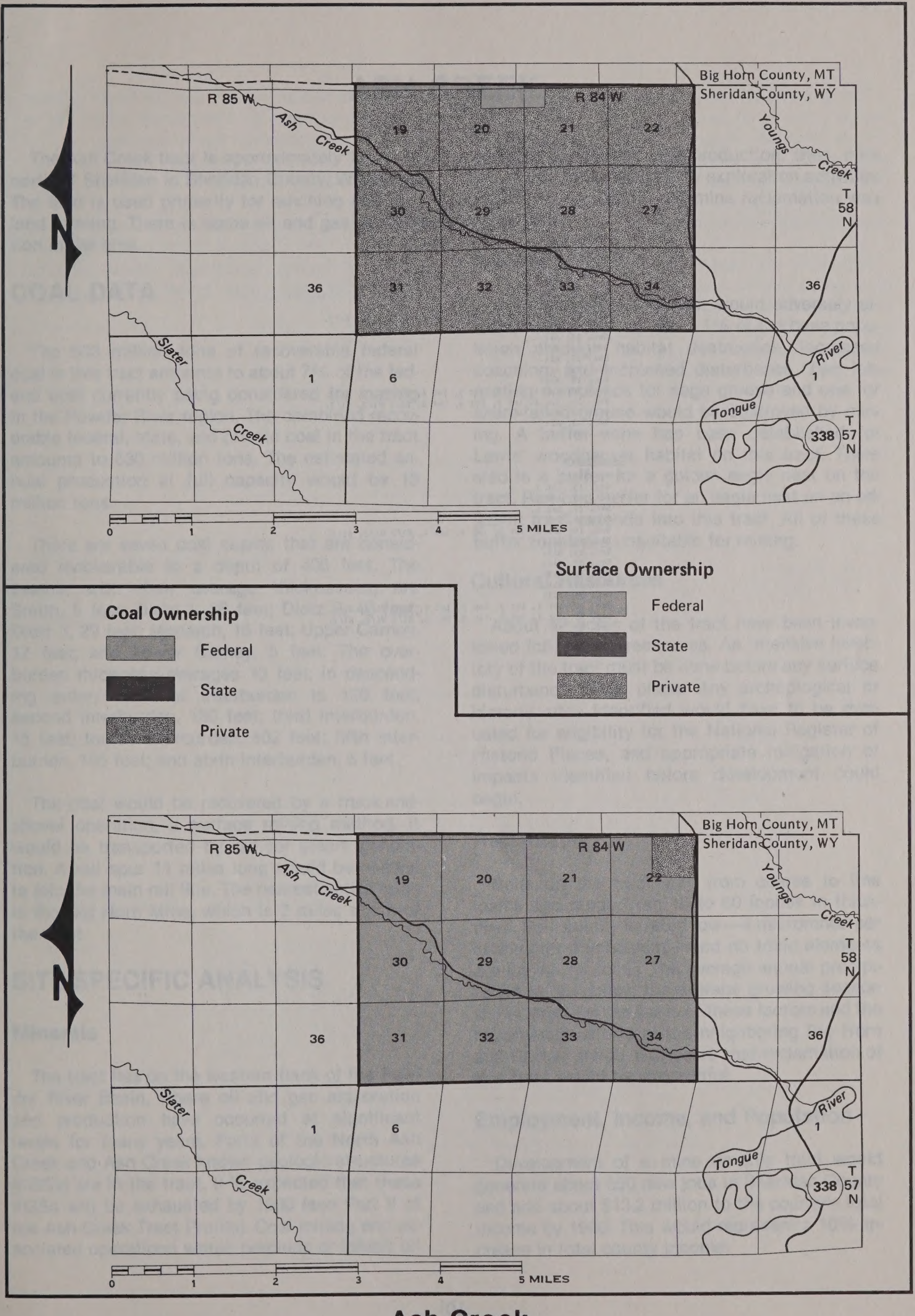
Powder
Weston County
Johnson County
85
Natrona County
Converse County
20
26
North Platte River
Casper
25
Douglas
20
N
Northern Powder River Area
21 Mud Springs
22 Wolf Mountain Maintenance
23 Northwest Otter Creek
24 Ashland (Decker-Birney)
25 Colstrip Area C
26 Colstrip Maintenance
27 Hanging Woman Creek
28 Downey Coulee
29 North Decker I
30 North Decker II
31 Spring Creek

Northern Powder River
Tract Location Map


Big Horn County, MT
Sheridan County, WY
R 85 W
R 84 W
Ash Creek
Youngs Creek
Slater Creek
Tongue River
338
T 58 N
T 57 N
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20
21
22
30
29
28
27
36
31
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6
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2
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4
5 MILES
Coal Ownership
Federal
State
Private
Surface Ownership
Federal
State
Private

Ash Creek

LEGAL DESCRIPTION

ASH CREEK TRACT

Federal Uncommitted

T58N, R84W
- Sec. 15; lot 1.
- Sec. 17; lot 1.
- Sec. 18; lot 1.
- Sec. 19; lot 1, lot 2, lot 3, lot 4, E1/2 W1/2, E1/2.
- Sec. 20; All.
- Sec. 21; All.
- Sec. 22; NW1/2, S1/2.
- Sec. 27; All.
- Sec. 28; All.
- Sec. 29: All.
- Sec. 30; lot 1, lot 2, lot 3, lot 4, E1/2 W1/2, E1/2.
- Sec. 31; lot 1, lot 2, lot 3, lot 4, E1/2 W1/2, E1/2.
- Sec. 32; All.
- Sec. 33; All.
- Sec. 34; All.

Total Tract

T58N, R84W
- Sec. 15; lot 1.
- Sec. 16; lot 1.
- Sec. 17; lot 1.
- Sec. 18; lot 1.
- Sec. 19; lot 1, lot 2, lot 3, lot 4, E1/2 W1/2, E1/2.
- Sec. 20; All.
- Sec. 21; All.
- Sec. 22; All.
- Sec. 27; All.
- Sec. 28; All.
- Sec. 29; All.
- Sec. 30; lot 1, lot 2, lot 3, lot 4, E1/2 W1/2, E1/2.
- Sec. 31; lot 1, lot 2, lot 3, lot 4, E1/2 W1/2, E1/2.
- Sec. 32; All.
- Sec. 33; All.
- Sec. 34; All.

ASH CREEK

The Ash Creek tract is approximately 11 miles north of Sheridan in Sheridan County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 503 million tons of recoverable federal coal in this tract amounts to about 7% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 530 million tons. The estimated annual production at full capacity would be 13 million tons.

There are seven coal seams that are considered recoverable to a depth of 400 feet. The seams, with their average thicknesses, are Smith, 5 feet; Dietz 1, 26 feet; Dietz 2, 40 feet; Dietz 3, 29 feet; Monarch, 16 feet; Upper Carney, 17 feet; and Lower Carney, 5 feet. The overburden thickness averages 13 feet; in descending order, the first interburden is 120 feet; second interburden, 130 feet; third interburden, 15 feet; fourth interburden, 102 feet; fifth interburden, 105 feet; and sixth interburden, 6 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 11 miles long would be needed to join the main rail line. The nearest active mine is the Big Horn Mine, which is 2 miles south of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the western flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. Parts of the North Ash Creek and Ash Creek known geologic structures (KGSs) are in the tract. It is expected that these KGSs will be exhausted by 1990 (see Part II of the Ash Creek Tract Profile). Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would adversely affect 60 mule deer, or about 1% of the base population, through habitat destruction, increased poaching, and increased disturbance. Two lek-nesting complexes for sage grouse and one for sharp-tailed grouse would be destroyed by mining. A buffer zone has been established for Lewis' woodpecker habitat on this tract. There also is a buffer for a golden eagle nest on the tract. Part of a buffer for an eagle nest on an adjacent tract extends into this tract. All of these buffer zones are unsuitable for mining.

Cultural Resources

About 12 acres of the tract have been inventoried for cultural resources. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archeological or historic sites identified would have to be evaluated for eligibility for the National Register of Historic Places, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract vary from coarse to fine loams and range from 10 to 60 inches in thickness. Soil salinity is rated low—4 micromhos per centimeter (mmhos/cm)—and no toxic elements are known to occur. The average annual precipitation is 16 inches; the average growing season is 114 days. On the basis of these factors and the reclamation efforts at the neighboring Big Horn and Decker mines, it appears that reclamation of this tract would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 550 new jobs in Sheridan County and add about $13.2 million to the county's total income by 1990. This would represent a 10% increase in total county income.

The population increase in the county is projected to be 1,700 people, 1,030 of whom would live in Sheridan. Community facilities would be expanded to the levels necessary to accommodate this 5% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 519 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $15,000 (assuming 130 acres was used for wheat production, the rest for cattle production). A maximum of 1,514 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a possible alluvial valley floor along Ash Creek. The Office of Surface Mining (OSM) and the Wyoming Department of Environmental Quality (DEQ) have been asked to evaluate this area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
ASH CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	7,779	
COAL INFORMATION		
Coal quality	Subbituminous; 9,210 BTUs per pound, 0.74% sulfur	
Recoverable reserves	530 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	5.33 : 1	
Net energy analysis	One pound of coal from this tract would produce 9,210 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 244 to 1 for the Ash Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

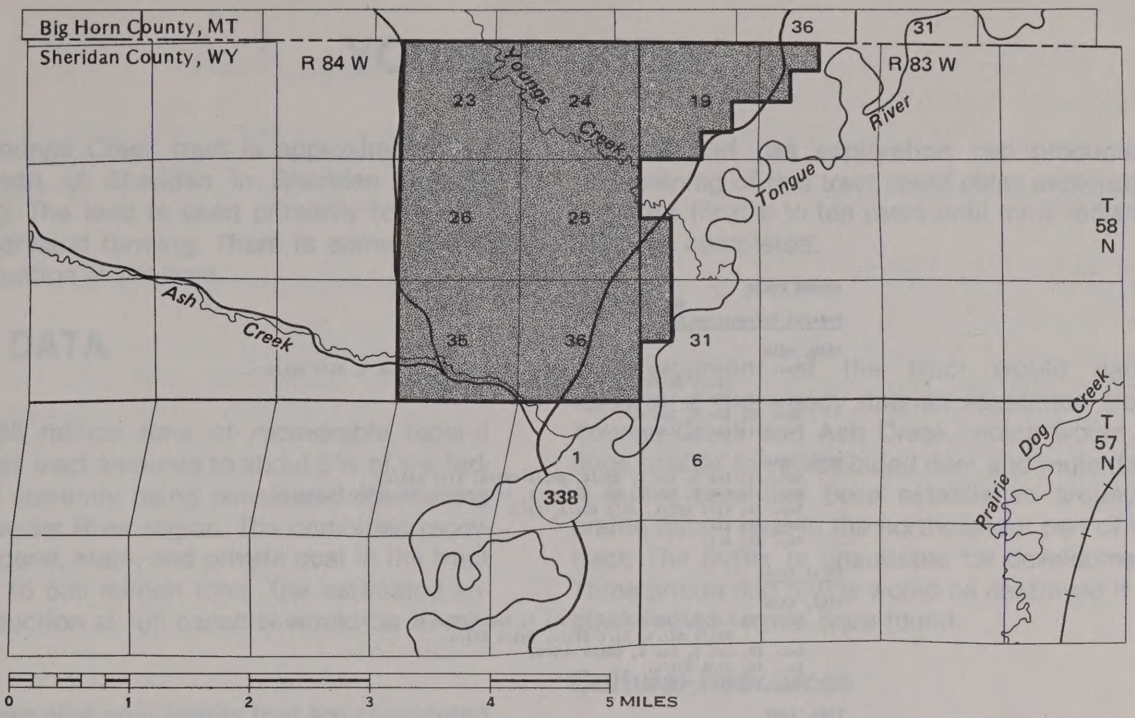
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential good	Low
Groundwater	Six domestic and livestock wells	Loss of supply during mining. Wells could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Livestock reservoirs; Youngs Creek and Ash Creek are perennial streams	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Varied habitat supports antelope, mule deer, white-tailed deer. One sharp-tailed grouse and two sage grouse leks, golden eagle nest, Lewis' woodpeckers, four prairie dog towns.	Displacement of deer and antelope; less suitable for deer and for antelope winter range after reclamation. Destruction of grouse leks; loss of waterfowl and songbirds, loss of prey for raptors and other predators.	Moderate
Cultural resources	About 12 acres have been surveyed. Inventory of tract and evaluation for National Register eligibility required.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class III.	Class would change to V during mining, but Class III restored afterward	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	One sharp-tailed and two sage grouse leks; buffers for golden eagle and Lewis' woodpecker; possible alluvial valley floor. Prairie dog towns.	Exception applied on grouse; leks would be destroyed. OSM determination pending on possible AVF. Prairie dog towns would have to be inventoried for ferrets before mining could begin.	High
LAND USES			
Major uses	Grazing, some crops; three occupied dwellings	Disturbance of 199 acres per year; dwellings would be removed.	Low
Oil and gas	Known geological structures in 1,630 acres of tract	None. KGSs would be depleted by 1990.	Low
Transportation	I-90 is south of tract; Wyo. 338 is east; 2 miles of graveled county road along east boundary.	Increase of 310 vehicles a day on graveled road. Rail spur 11 miles long would carry seven trains a day.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Sheridan County	Annual agricultural receipts	32,800	-3	Assumes that all 519 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-14	Assumes that the 130 acres of cropland on tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-10	Assumes that the 130 acres of cropland on tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-15	Assumes that the 130 acres of cropland on tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-15	Assumes that the 130 acres of cropland on tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Sheridan County	8,153	8,800	---	10,200	550 more jobs	10,400	550 more jobs	Low; 5% increase
Population	Sheridan	15,146	16,300	---	18,900	1,030 more persons	19,300	1,030 more persons	Low; 5% increase


Big Horn County, MT
Sheridan County, WY
R 84 W
R 83 W
Youngs Creek
Tongue River
Ash Creek
Prairie Dog Creek
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26
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35
36
31
36
31
1
6
338
T 58 N
T 57 N
0
1
2
3
4
5 MILES

Surface Ownership

▨ Federal (none on this map)

▨ State (none on this map)

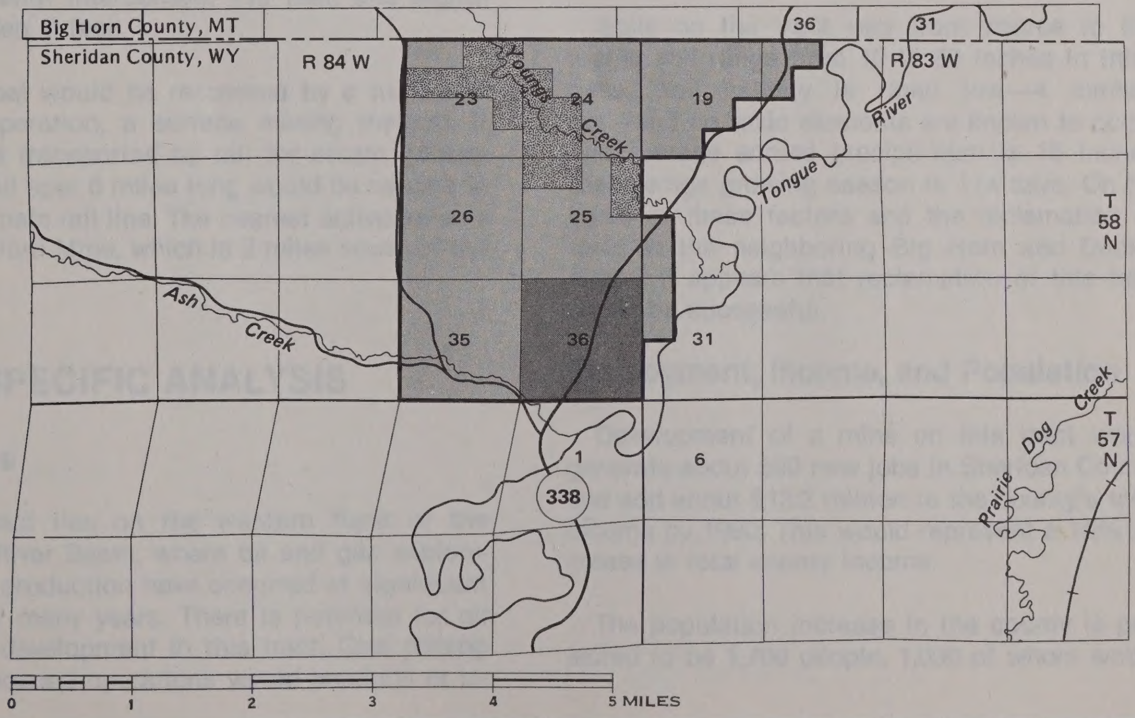
▨ Private

Coal Ownership

▨ Federal

▨ State

▨ Private


Big Horn County, MT
Sheridan County, WY
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Youngs Creek
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338
T 58 N
T 57 N
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3
4
5 MILES

Youngs Creek

LEGAL DESCRIPTION

YOUNGS CREEK

Federal Uncommitted Coal

T58N, R83W
Sec. 19; lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, NW1/4 SE1/4.
Sec. 20; lot 3, lot 4, SW1/4 NW 1/4.
Sec. 30; lot 3, lot 4.
Sec. 31; lot 1, lot 2.

T58N, R84W
Sec. 23; lot 3, lot 4, SW1/4, NW1/4 SE1/4, S1/2 SE1/4.
Sec. 24; lot 1, lot 2, lot 3, lot 4, S1/2 NE1/4, SE1/4 NW1/4, SE1/4.
Sec. 25; W1/2 NE1/4, S1/2 NW1/4, S1/2.
Sec. 26; All.
Sec. 35; All.

Total Tract

T58N, R83W
Sec. 19; lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, NW1/4 SE1/4.
Sec. 20; lot 3, lot 4, SW1/4 NW1/4.
Sec. 30; W1/2 SW1/4.
Sec. 31; W1/2 NW1/4.

T58N, R84W
Sec. 23; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 24; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 25; All.
Sec. 26; All.
Sec. 35; All.
Sec. 36; All.

YOUNGS CREEK

The Youngs Creek tract is approximately 11 miles north of Sheridan in Sheridan County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 388 million tons of recoverable federal coal in this tract amounts to about 5% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 535 million tons. The estimated annual production at full capacity would be 13 million tons.

There are nine coal seams that are considered recoverable to a depth of 400 feet. The first three are of limited areal extent. The seams, with their average thicknesses, are Roland Baker, 6 feet; Roland-Taff, 5 feet; Smith, 10 feet; Dietz 1, 26 feet; Dietz 2, 41 feet; Dietz 3, 28 feet; Monarch, 17 feet; Upper Carney, 17 feet; and Lower Carney, 8 feet. The overburden thickness averages 75 feet; in descending order, the first interburden is 100 feet; second interburden, 95 feet; third interburden, 227 feet; fourth interburden, 100 feet; fifth interburden, 15 feet; sixth interburden, 87 feet; seventh interburden, 115 feet; and eighth interburden, 8 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 8 miles long would be needed to join the main rail line. The nearest active mine is the Big Horn Mine, which is 2 miles south of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the western flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development in this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would cause removal of the woody riparian vegetation along Youngs Creek and Ash Creek, which would reduce habitat for white-tailed deer and mule deer. A buffer zone has been established around a prairie falcon nest in the northeastern part of the tract. The buffer is unsuitable for development. Three prairie dog towns would be destroyed if no black-footed ferrets were found.

Cultural Resources

About 1,420 acres of the tract have been inventoried for cultural resources, and 20 sites have been identifed. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract vary from coarse to fine loams and range from 10 to 60 inches in thickness. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 16 inches; the average growing season is 114 days. On the basis of these factors and the reclamation efforts at the neighboring Big Horn and Decker mines, it appears that reclamation of this tract would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 550 new jobs in Sheridan County and add about $13.2 million to the county's total income by 1990. This would represent a 10% increase in total county income.

The population increase in the county is projected to be 1,700 people, 1,030 of whom would live in Sheridan. Community facilities would be expanded to the levels necessary to accommodate this 5% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 474 acres a year—including 360 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $46,000 (assuming acreage was used for wheat production). A maximum of 1,044 acres would be removed from production at any one time.

Alluvial Valley Floors

There are potential alluvial valley floors along Ash Creek and Youngs Creek. The OSM and the Wyoming DEQ have been asked to evaluate this area.

Rights-of-Way and Buffers

Wyoming Highway 338, which is unsuitable for mining, segregates 340 acres containing about 43 million tons of recoverable coal from the remainder of the tract. This property, which is along the eastern edge of the tract, would be available for mining if plans were made to move the highway.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
YOUNGS CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	4,586	
COAL INFORMATION		
Coal quality	Subbituminous; 9,113 BTUs per pound, 0.56% sulfur	
Recoverable reserves	535 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	4.32 : 1	
Net energy analysis	One pound of coal from this tract would produce 9,113 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 241 to 1 for the Youngs Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

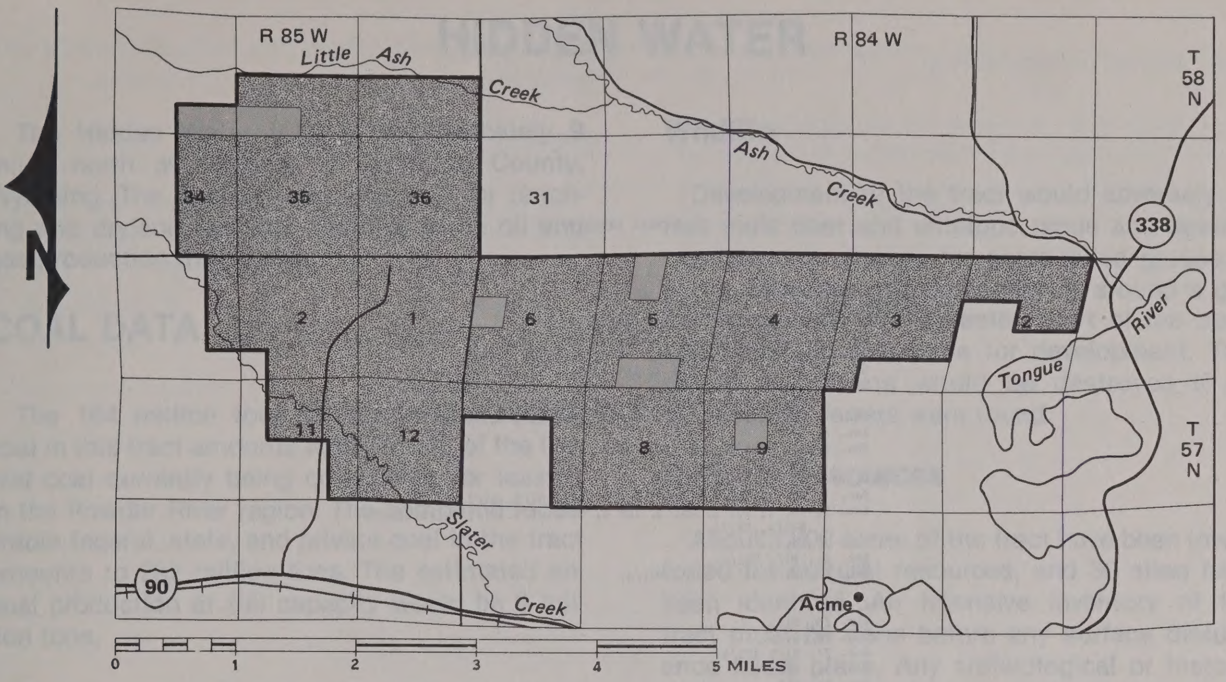
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of Wyo. 24-hour standard and of federal secondary and primary 24-hour standards in 1995 and during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential good	Low
Groundwater	Some domestic and livestock wells	Loss of supply during mining. Wells destroyed could be replaced at greater cost by drilling deeper.	Low
Surface water	Livestock reservoirs, Ash Creek and Youngs Creek are perennial streams.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVFs along Youngs Creek, Ash Creek, and Tongue River.	Further study required	Moderate
Wildlife	Antelope common, some mule deer and white-tailed deer; buffer for prairie falcon eyries; three prairie dog towns	Loss of browse species would make tract less suitable for fall-winter antelope habitat; smoother topography would lower postmining deer populations; loss of prey for falcons and other predators. If no ferrets present, destruction of prairie dog towns would mean loss of prey for raptors.	Moderate
Cultural resources	About 1,420 acres have been surveyed; 20 sites identified. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class III	Class would change to V during mining, but Class III restored afterward	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Wyo. 338 crosses tract; buffer for two prairie falcon eyries; possible alluvial valley floors. Three prairie dog towns.	Highway and buffer unsuitable for mining. High OSM determination pending on possible AVFs. Prairie dog towns would have to be inventoried for ferrets before mining could begin.	High
LAND USES			
Major uses	Grazing, some crops; two occupied dwellings	Disturbance of 114 acres per year; dwellings would be removed.	Low
Oil and gas	None on tract		
Transportation	Wyo. 338 crosses tract; I-90 to south; graveled road on west side. Railroad is 8 miles east.	Graveled road would be moved. Access road to be built would carry 320 vehicles per day. Eight trains a day would use rail spur.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Sheridan County	Annual agricultural receipts	32,800	-3	Assumes that all 474 acres to be disturbed annually would be devoted to the support of cattle. (This includes 360 acres for mine facilities.)	Low
			-43	Assumes that all 474 acres to be disturbed annually would be devoted to barley.	Low
			-28	Assumes that all 474 acres to be disturbed annually would be devoted to oats.	Low
			-46	Assumes that all 474 acres to be disturbed annually would be devoted to wheat.	Low
			-46	Assumes that all 474 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Sheridan County	8,153	8,800	—	10,200	550 more jobs	10,400	550 more jobs	Low; 5% increase
Population	Sheridan	15,146	16,300	—	18,900	1,030 more persons	19,300	1,030 more persons	Low; 5% increase


R 85 W
R 84 W
Little Ash Creek
Ash Creek
T 58 N
T 57 N
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35
36
31
2
1
6
5
4
3
2
11
12
8
9
338
Tongue River
Slater Creek
90
Acme
0
1
2
3
4
5 MILES

Surface Ownership

▨ Federal

▨ State (none on this map)

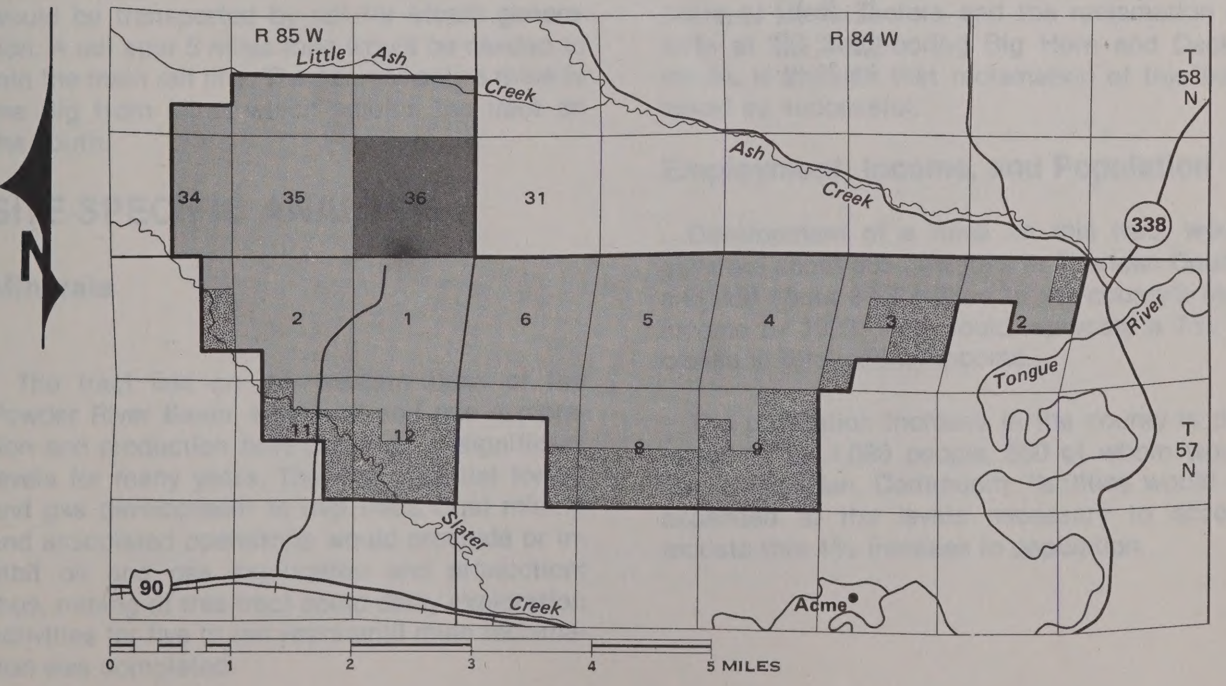
▨ Private

Coal Ownership

▨ Federal

▨ State

▨ Private


R 85 W
R 84 W
Little Ash Creek
Ash Creek
T 58 N
T 57 N
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11
12
8
9
338
Tongue River
Slater Creek
90
Acme
0
1
2
3
4
5 MILES

Hidden Water

LEGAL DESCRIPTION

HIDDEN WATER

Federal Uncommitted

T57N, R84W
Sec. 2; lot 2, lot 3, lot 4, S1/2 NE1/4.
Sec. 3; lot 1, lot 2, lot 3, lot 4, SW1/4 NW1/4, N1/2 SW1/4.
Sec. 4; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 6; lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 7; lot 1, NE1/4 NW1/4, NW1/4 NE1/4, E1/2 NE1/4.
Sec. 8; N1/2.
Sec. 9; N1/2 NW1/4, SE1/4 NW1/4.

T57N, R85W
Sec. 1; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 2; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, N1/2 SW1/4, SE1/4 SW1/4, SE1/4.
Sec. 3; lot 1.
Sec. 11; N1/2 NE1/4.
Sec. 12; N1/2 N1/2, SW1/4 NW1/4.

T58N, R85W
Sec. 25; S1/2.
Sec. 26; S1/2.
Sec. 27; S1/2 SE1/4.
Sec. 34; E1/2.
Sec. 35; All.

Total Tract

T57N, R84W
Sec. 2; lot 1, lot 2, lot 3, lot 4, S1/2 NE1/4.
Sec. 3; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, N1/2 S1/2, SW1/4 SW1/4.
Sec. 4; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 6; lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 7; lot 1, NE1/4 NW1/4, NW1/4 NE1/4, E1/2 E1/2.
Sec. 8; All.
Sec. 9; All.

T57N, R85W
Sec. 1; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 2; lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, N1/2 SW1/4, SE1/4 SW1/4, SE1/4.
Sec. 3; lot 1, SE1/4 NE1/4, NE1/4 SE1/4.
Sec. 11; NE1/4, E1/2 NW1/4, E1/2 SE1/4.
Sec. 12; All.

T58N, R85W
Sec. 25; S1/2.
Sec. 26; S1/2.
Sec. 27; S1/2 SE1/4.
Sec. 34; E1/2.
Sec. 35; All.
Sec. 36; All.

HIDDEN WATER

The Hidden Water tract is approximately 9 miles north of Sheridan in Sheridan County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 164 million tons of recoverable federal coal in this tract amounts to about 2% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 282 million tons. The estimated annual production at full capacity would be 9 million tons.

There are six coal seams that are considered recoverable to a depth of 400 feet. The seams, with their average thicknesses, are Dietz 1, 15 feet; Dietz 2, 6 feet; Dietz 3, 26 feet; Monarch, 14 feet; Upper Carney, 16 feet; and Lower Carney, 5 feet. The overburden thickness averages 25 feet; in descending order, the first interburden is 125 feet; second interburden, 21 feet; third interburden, 105 feet; fourth interburden, 138 feet; fifth interburden, 12 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 5 miles long would be needed to join the main rail line. The nearest active mine is the Big Horn Mine, which adjoins the tract on the south.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the western flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development in this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would adversely affect mule deer and antelope range and destroy two lek-nesting areas for sharp-tailed grouse. A buffer zone has been established around a golden eagle nest in the eastern part of the tract. The buffer is unsuitable for development. Two prairie dog towns would be destroyed if no black-footed ferrets were found.

Cultural Resources

About 1,800 acres of the tract have been inventoried for cultural resources, and 30 sites have been identifed. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract vary from coarse to fine loams and range from 10 to 60 inches in thickness. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 16 inches; the average growing season is 114 days. On the basis of these factors and the reclamation efforts at the neighboring Big Horn and Decker mines, it appears that reclamation of this tract would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 385 new jobs in Sheridan County and add about $9.2 million to the county's total income by 1990. This would represent a 7% increase in total county income.

The population increase in the county is projected to be 1,080 people, 650 of whom would live in Sheridan. Community facilities would be expanded to the levels necessary to accommodate this 4% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 625 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $36,000 (assuming 360 acres was used for hay production, the rest for cattle production). A maximum of 2,150 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor along Slater Creek. The OSM and the Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
HIDDEN WATER COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	8,886	
COAL INFORMATION		
Coal quality	Subbituminous; 9,218 BTUs per pound, 0.72% sulfur	
Recoverable reserves	282 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	7.13 : 1	
Net energy analysis	One pound of coal from this tract would produce 9,218 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 244 to 1 for the Hidden Water tract.	

EFFECTS OF LEASING AND DEVELOPMENT

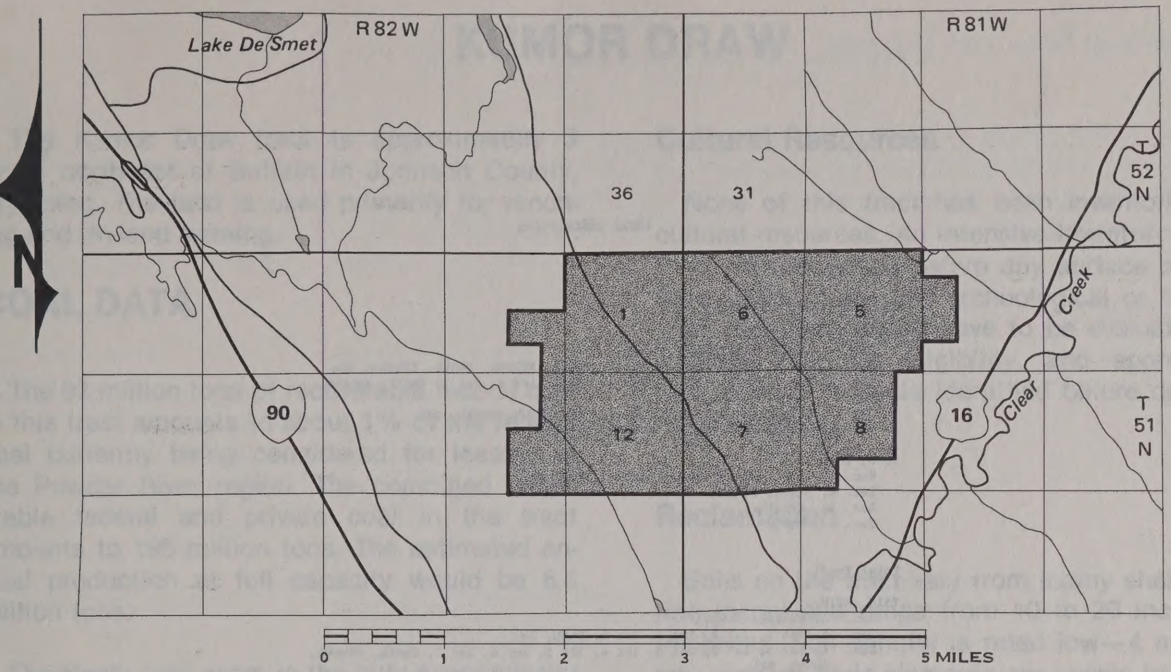
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential good	Low
Groundwater	No wells on tract; aquifers were interrupted by former mining.	Deep wells could be drilled after mining.	Low
Surface water	Several impoundments and reservoirs, some waterfowl habitat.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope common; mule deer north of Hidden Water creek; some waterfowl; two sharp-tailed grouse leks; two prairie dog towns, one golden eagle nest.	Increased poaching and road kills; habitat after reclamation not as suitable for deer or wintering antelope; grouse leks destroyed; loss of prey base for raptors and other predators.	Moderate
Cultural resources	About 1,800 acres have been surveyed; 30 sites found. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class III.	Class would change to V during mining, but Class III restored afterward	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Buffer zone for one golden eagle nest; possible alluvial valley floor. Two prairie dog towns.	OSM determination pending on possible AVF. Prairie dog towns would have to be inventoried for ferrets before mining could begin.	Moderate
LAND USES			
Major uses	Grazing, some crops; one occupied dwelling	Disturbance of 305 acres per year; dwelling would be removed.	Low
Oil and gas	None on tract		Low
Transportation	I-90 is just south of tract; graveled county road on west. Big Horn Mine rail loop is 5 miles south.	Rail spur would use 105 acres outside tract.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Sheridan County	Annual agricultural receipts	32,800	-3	Assumes that all 625 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-34	Assumes that the 360 acres of cropland on tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-22	Assumes that the 360 acres of cropland on tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-36	Assumes that the 360 acres of cropland on tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-36	Assumes that the 360 acres of cropland on tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Sheridan County	8,153	8,800	---	10,200	385 more jobs	10,400	385 more jobs	Low; 4% increase
Population	Sheridan	15,146	16,300	---	18,900	650 more persons	19,300	650 more persons	Low; 4% increase


Lake De Smet
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R81W
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52
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31
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5 MILES

Coal Ownership

▨ Federal

▨ State (none on this map)

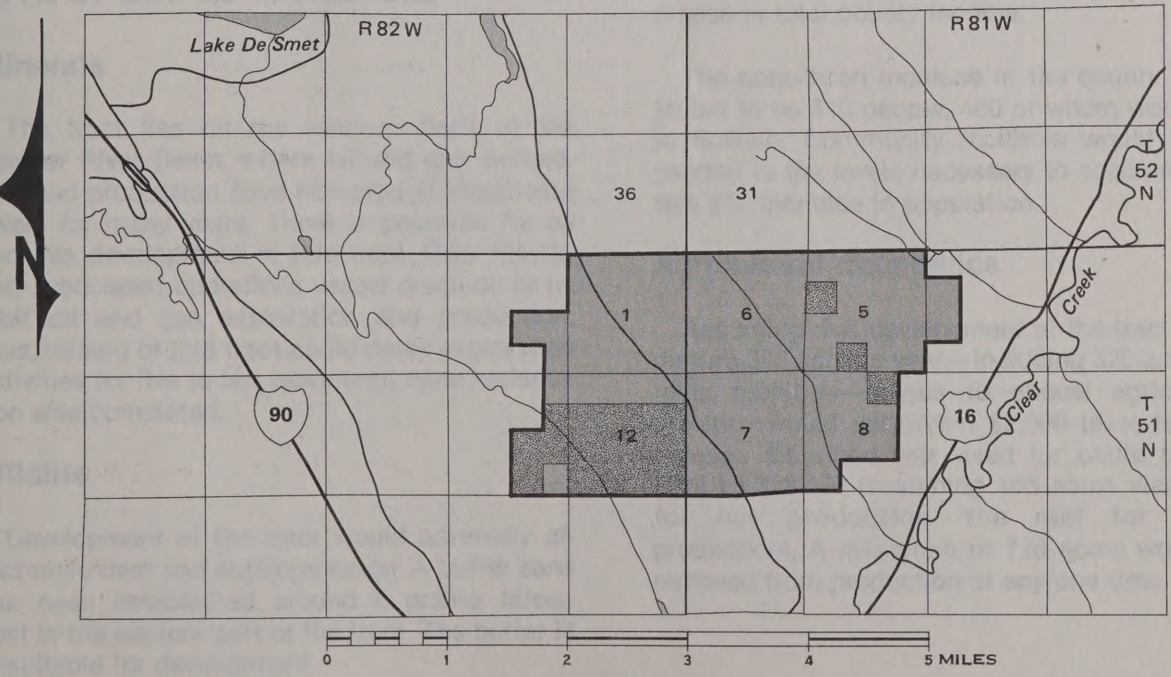
▨ Private

Surface Ownership

▨ Federal (none on this map)

▨ State (none on this map)

▨ Private


Lake De Smet
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16
Clear
Creek
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51
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0
1
2
3
4
5 MILES

Kumor Draw

LEGAL DESCRIPTION

KUMOR DRAW TRACT

Federal Uncommitted

T51N, R81W
Sec. 4, SW¼NW¼, NW¼ SW¼
Sec. 5, lot 1, lot 2, lot 3, lot 4, S½NE¼, SE¼NW¼, N½SW¼, SW¼SW¼, SE¼.
Sec. 6, lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S½NE¼, SE¼NW¼,
E½SW¼, SE¼.
Sec. 7, lot 1, lot 2, lot 3, lot 4, NE¼, E½NW¼, E½SW¼, SE¼.
Sec. 8, SW¼NE¼ NW¼, N½SW¼, SW¼SW¼ NW¼SE¼.

T51N, R82W
Sec. 1, lot 1, lot 2, lot 3, lot 4, S½N½, S½.
Sec. 2, N½SE¼, SE¼SE¼
Sec. 11, SE¼SE¼
Sec. 12, N½N½.

Total Tract

T51N, R81W
Sec. 4, SW¼NW¼, NW¼SW¼.
Sec. 5, lot 1, lot 2, lot 3, lot 4, S½N½, S½.
Sec. 6, lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S½NE¼, SE¼NW¼,
E½SW¼, SE¼.
Sec. 7, lot 1, lot 2, lot 3, lot 4, NE¼, E½NW¼, E½SW¼, SE¼.
Sec. 8, W½NE¼, NW¼, N½SW¼, SW¼SW¼, NW¼SE¼.

T51N, R82W
Sec. 1, lot 1, lot 2, lot 3, lot 4, S½N½, S½.
Sec. 2, N½SE¼, SE¼SE¼.
Sec. 11, E½NE¼, SE¼.
Sec. 12, all.

Prairie Falcon Buffer Zone

T51N, R81W
Sec. 5, W½SE¼, W½SE¼SE¼, SE¼SE¼SE¼, SW¼SW¼NE¼, SE¼SE¼NW¼, SW¼SW¼, NE¼SW¼,
SE¼NW¼SW¼
Sec. 8, N½SW¼NE¼, NW¼SE¼NE¼, NE¼NE¼, NW¼

KUMOR DRAW

The Kumor Draw tract is approximately 3 miles northeast of Buffalo in Johnson County, Wyoming. The land is used primarily for ranching and dryland farming.

COAL DATA

The 92 million tons of recoverable federal coal in this tract amounts to about 1% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and private coal in the tract amounts to 195 million tons. The estimated annual production at full capacity would be 6.5 million tons.

The Healy coal seam is the only economically recoverable seam of subbituminous coal. It averages 62 feet thick. The average overburden thickness is 125 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 19 miles long would be needed to join the main rail line. The nearest active mine is the Big Horn Mine, which is 36 miles north of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the western flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development in this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would adversely affect mule deer and antelope range. A buffer zone has been established around a prairie falcon nest in the eastern part of the tract. The buffer is unsuitable for development.

Cultural Resources

None of this tract has been inventoried for cultural resources. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract vary from loamy shallow to fine loamy and range from 10 to 20 inches in thickness. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 16 inches; the average growing season is 114 days. On the basis of these factors and the reclamation efforts at the Big Horn and Decker mines to the north, it appears that reclamation of this tract would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 255 new jobs in Johnson County and add about $4.6 million to the county's total income by 1990. This would represent a 13% increase in total county income.

The population increase in the county is projected to be 810 people, 460 of whom would live in Buffalo. Community facilities would be expanded to the levels necessary to accommodate this 9% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 388 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $2,000 (assuming all acreage disturbed was used for cattle production) to $23,000 (assuming 165 acres was used for hay production, the rest for cattle production). A maximum of 728 acres would be removed from production at any one time.

Rights-of-Way and Buffers

A 6-foot water pipeline with a right-of-way varying from 100 to 300 feet crosses the tract for approximately 3 miles. However, it could feasibly be relocated.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
KUMOR DRAW COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	4,042	
COAL INFORMATION		
Coal quality	Lignite/Subbituminous; 7,300 BTUs per pound, 0.53% sulfur	
Recoverable reserves	195 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	1.43 : 1	
Net energy analysis	One pound of coal from this tract would produce 7,300 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 193 to 1 for the Kumor Draw tract.	

EFFECTS OF LEASING AND DEVELOPMENT

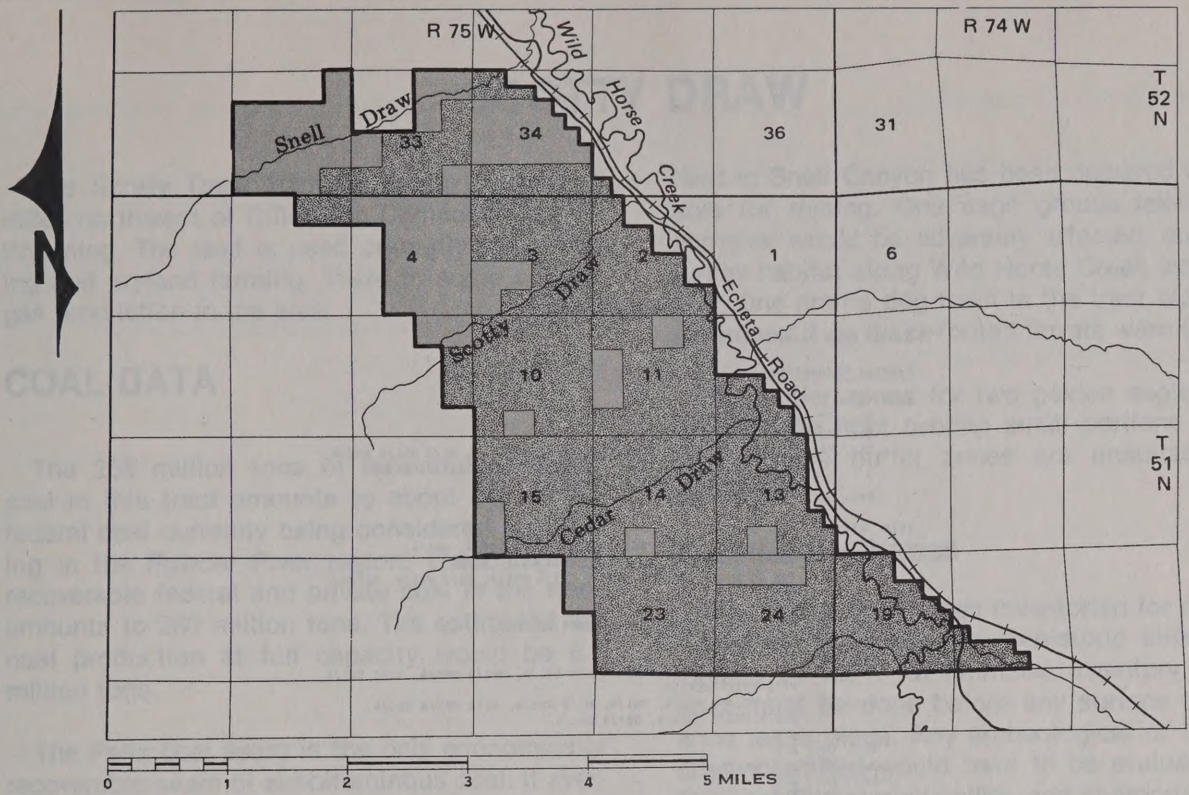
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential good	Low
Groundwater	Some domestic and livestock wells	Loss of supply during mining. Wells destroyed could be replaced at greater cost by drilling deeper	Moderate
Surface water	Livestock and wildlife use Kumor Draw and some small reservoirs.	During mining, loss of livestock and wildlife supply. Cou'd be restored with reclamation.	Moderate
Alluvial valley floors	None.		
Wildlife	Antelope abundant on west half, mule deer on east half of tract; prairie falcon nest on tract.	Loss of browse species would make tract less suitable for fall-winter antelope habitat; smoother topography and loss of cover and browse would cause long-term decline in deer population. Buffer would protect falcon nest but hunting habitat would be lost.	Moderate
Cultural resources	Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class III.	Class would change to V during mining, but Class III restored afterward	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Rights-of-way exist for pipeline and county road. Buffer for prairie falcon nest.	Road and pipeline would be moved. Falcon buffer could not be mined.	Moderate
LAND USES			
Major uses	Grazing, some crops; one occupied dwelling	Disturbance of 68 acres per year; dwelling would be removed.	Low
Oil and gas	None on tract		Low
Transportation	A county road runs through tract for 2.6 miles; Wyo. 16 is east of tract; railroad 19 miles away	Road would be relocated or upgraded; bridge built across Clear Creek. Access road would carry 250 vehicles per day. Five trains a day would use rail spur.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Johnson County	Annual agricultural receipts	28,100	-2	Assumes that all 388 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-20	Assumes that the 165 acres of cropland on tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-15	Assumes that the 165 acres of cropland on tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-17	Assumes that the 165 acres of cropland on tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-23	Assumes that the 165 acres of cropland on tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Johnson County	2,285	2,400	---	2,800	255 more jobs	2,800	255 more jobs	Low; 13% increase
Population	Buffalo	3,799	4,300	---	5,000	460 more persons	5,100	460 more persons	Low; 9% increase

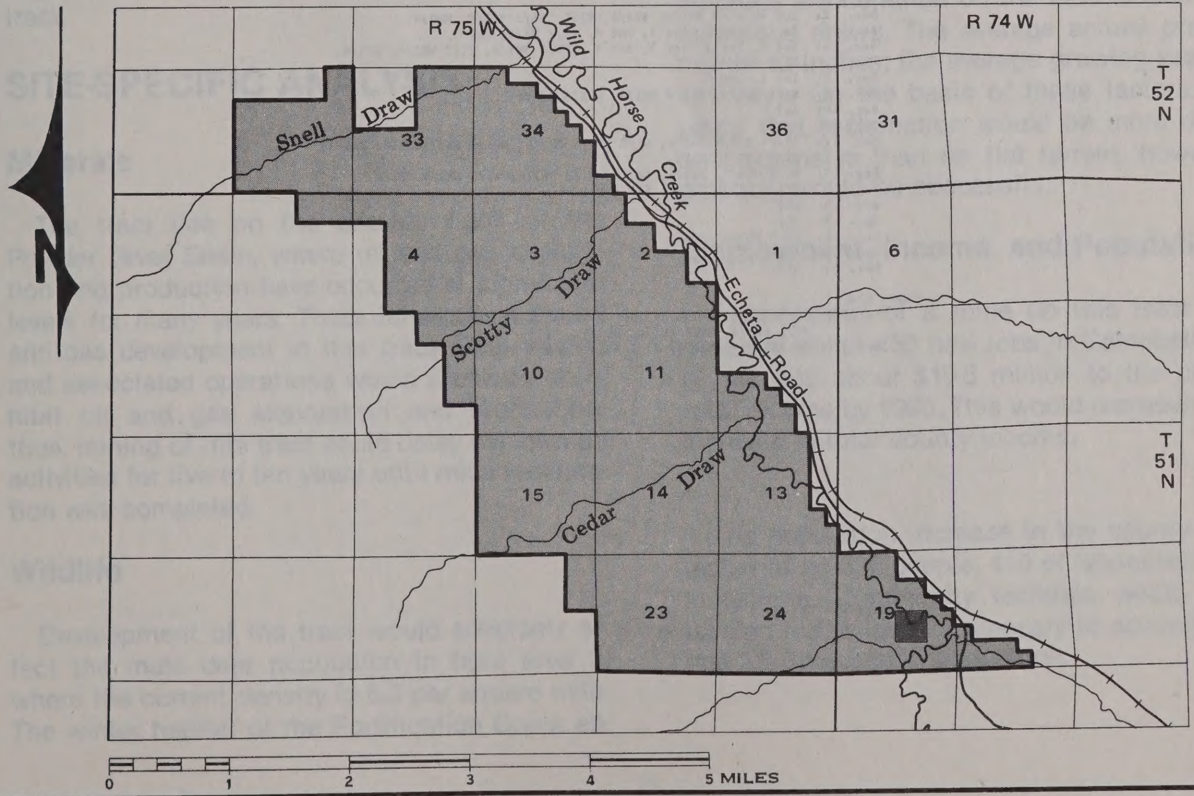

R 75 W
R 74 W
T 52 N
T 51 N
Snell Draw
Wild Horse Creek
Scotty Draw
Echeta Road
Cedar Draw
33
34
36
31
4
3
2
1
6
10
11
15
14
13
23
24
19
0
1
2
3
4
5 MILES

Surface Ownership

- ▨ Federal
- ■ State (none on this map)
- ▨ Private

Coal Ownership

- ▨ Federal
- ■ State
- ▨ Private (none on this map)


R 75 W
R 74 W
T 52 N
T 51 N
Snell Draw
Wild Horse Creek
Scotty Draw
Echeta Road
Cedar Draw
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15
14
13
23
24
19
0
1
2
3
4
5 MILES

Scotty Draw

LEGAL DESCRIPTION

SCOTTY DRAW TRACT

Federal Uncommitted Coal

T52N, R75W
Sec. 32: NE1/4 NE1/4, S1/2 N1/2, S1/2.
Sec. 33: SW1/4, E1/2.
Sec. 34: S1/2 NE1/4 NW1/4, NW1/4 NW1/4, S1/2 NW1/4, W1/2 SW1/4 NE1/4, SE1/4 SW1/4 NE1/4, SE1/4 NE1/4 SE1/4, W1/2 NE1/4 SE1/4, SE1/4 SE1/4, W1/2S E1/4, SW1/4.
Sec. 35: SW1/4 SW1/4 SW1/4.

T51N, R75W
Sec. 2: lot 4, S1/2 NW1/4, SE1/4 SE1/4, W1/2 SE1/4, SW1/4.
Sec. 3: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 4: lot 1, lot 2, lot 3, lot 4, SE1/4 NW1/4, S1/2 NE1/4, SE1/4, E1/2 SW1/4.
Sec. 5: lot 1, lot 2.
Sec. 9: N1/2 NE1/4, SE1/4 NE1/4, NE1/4 SE1/4.
Sec. 10: All.
Sec. 11: All.
Sec. 12: SE1/4 NE1/4 SW1/4, W1/2 NE1/4 SW1/4, NW1/4 SW1/4, S1/2 SW1/4, W1/2 SW1/4 SE1/4.
Sec. 13: W1/2 NE1/4, NW1/4, SW1/4, W1/2 SE1/4, W1/2 NE1/4 SE1/4, SE1/4 NE1/4 SE1/4, SE1/4 SE1/4.
Sec. 14: All.
Sec. 15: All.
Sec. 22: E1/2 NE1/4.
Sec. 23: All.
Sec. 24: All.

T51N, R74W
Sec. 19: lot 1, lot 2, lot 3, lot 4, SW1/4 SE1/4 NE1/4, SW1/4 NE1/4, E1/2 NW1/4, E1/2 SW1/4, SW1/4 SE1/4, E1/2 SE1/4.
Sec. 20: SW1/4 NW1/4 SW1/4, S1/2 SW1/4, SW1/4 SW1/4 SE1/4.

Total Tract

T52N, R75W
Sec. 32: NE1/4 NE1/4, S1/2 N1/2, S1/2.
Sec. 33: E1/2, SW1/4.
Sec. 34: S1/2 NE1/4 NW1/4, NW1/4 NW1/4, S1/2 NW1/4, W1/2 SW1/4 NE1/4, SE1/4 SW1/4, NE1/4, SE1/4 NE1/4 SE1/4, W1/2 NE1/4 SE1/4, SE1/4 SE1/4, W1/2 SE1/4, SW1/4.
Sec. 35: SW1/4 SW1/4 SW1/4.

T51N, R75W
Sec. 2: lot 4, S1/2 NW1/4, SE1/4 SE1/4, W1/2 SE1/4, SW1/4.
Sec. 3: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 4: lot 1, lot 2, lot 3, lot 4, SE1/4 NW1/4, S1/2 NE1/4, SE1/4, E1/2 SW1/4.
Sec. 5: lot 1, lot 2.
Sec. 9: N1/2 NE1/4, SE1/4 NE1/4, NE1/4 SE1/4.
Sec. 10: All.
Sec. 11: All.
Sec. 12: SE1/4 NE1/4 SW1/4, W1/2 NE1/4 SW1/4, NW1/4 SW1/4, S1/2 SW1/4, W1/2 SW1/4 SE1/4.
Sec. 13: W1/2 NE1/4, NW1/4, SW1/4, W1/2 SE1/4, W1/2 NE1/4 SE1/4, SE1/4 NE1/4 SE1/4, SE1/4 SE1/4.
Sec. 14: All.
Sec. 15: All.
Sec. 22: E1/2 NE1/4.
Sec. 23: All.
Sec. 24: All.

T51N, R74W
Sec. 19: lot 1, lot 2, lot 3, lot 4, SW1/4 SE1/4 NE1/4, SW1/4 NE1/4, E1/2 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 20: SW1/4 NW1/4 SW1/4, S1/2 SW1/4, SW1/4 SW1/4 SE1/4.

SCOTTY DRAW

The Scotty Draw tract is approximately 10 miles northwest of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 258 million tons of recoverable federal coal in this tract amounts to about 4% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and private coal in the tract amounts to 260 million tons. The estimated annual production at full capacity would be 8.7 million tons.

The Felix coal seam is the only economically recoverable seam of subbituminous coal. It averages 26 feet thick. The average overburden thickness is 200 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. The main rail line in the area borders the tract on the east. The nearest active mine is the Eagle Butte Mine, which is 11 miles east of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development in this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would adversely affect the mule deer population in hunt area 2, where the current density is 6.3 per square mile. The winter habitat of the Fortification Creek elk herd in Snell Canyon has been declared unsuitable for mining. One sage grouse lek-nesting complex would be adversely affected, and wild turkey habitat along Wild Horse Creek would be lost. One prairie dog town in the tract would be destroyed if no black-footed ferrets were found.

The buffer zones for two golden eagle nests west of the tract overlap small portions of the tract. Those buffer zones are unsuitable for mining.

Cultural Resources

The tract has not been inventoried for cultural resources; however, two prehistoric sites were located in 1981. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are fine textured (more than 35% clay). The depth to soft shale ranges from less than 20 inches to more than 40 inches. Rock outcrops are common on the side slopes of the numerous draws. The average annual precipitation is 13 inches; the average growing season is 111 days. On the basis of these factors, it appears that reclamation would be more difficult and expensive than on flat terrain; however, it probably would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 430 new jobs in Campbell County and add about $10.8 million to the county's total income by 1990. This would represent a 2% increase in total county income.

The population increase in the county is projected to be 830 people, 410 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 2% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 511 acres a year—including 310 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $7,000 (assuming acreage was used for wheat and cattle production). A maximum of 1,612 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor along Wild Horse Creek. The OSM and Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
SCOTTY DRAW COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	8,598	
COAL INFORMATION		
Coal quality	Subbituminous; 8,186 BTUs per pound, 0.69% sulfur	
Recoverable reserves	260 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	5.87 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,186 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 217 to 1 for the Scotty Draw tract.	

EFFECTS OF LEASING AND DEVELOPMENT

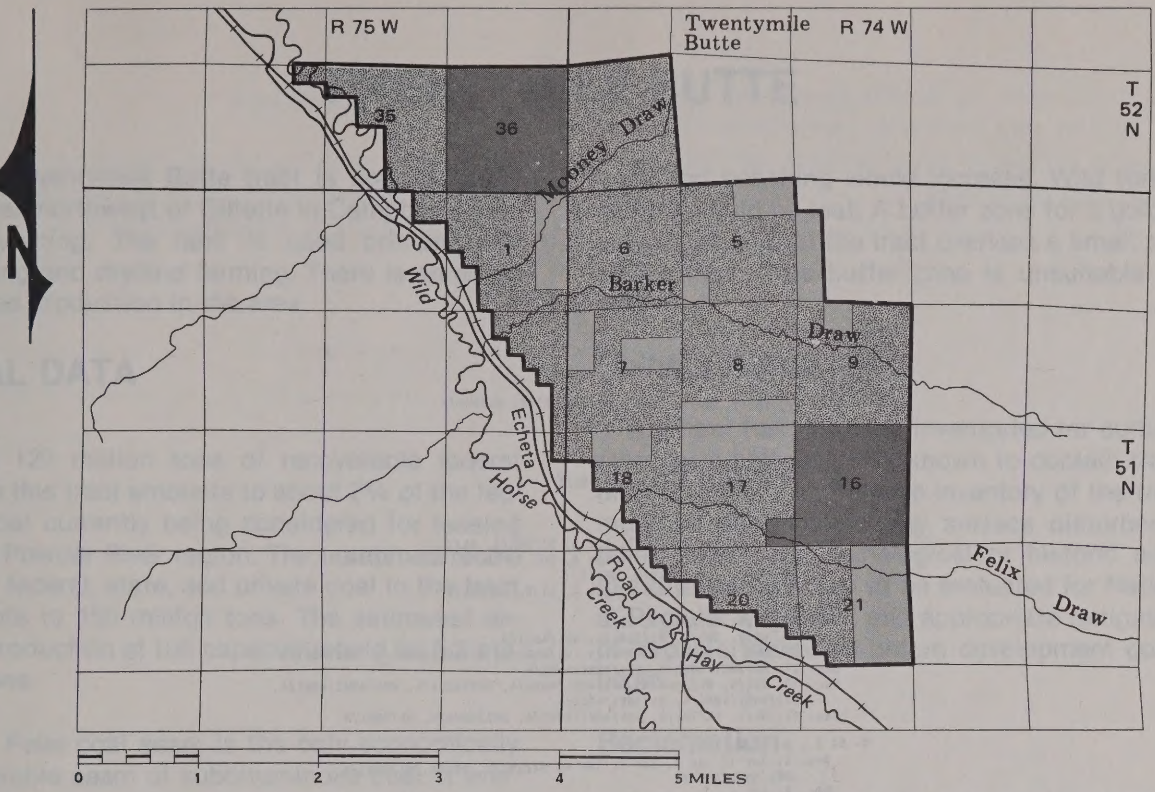
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990, of same plus federal primary 24-hour standards in 1995 and during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Steep, rough topography and shallow soils make reclamation difficult. Potential fair.	Moderate
Groundwater	Wasatch and Fort Union formations	Destruction of wells in Wasatch. Wells destroyed could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Several livestock reservoirs; streams are intermittent	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF along Wild Horse Creek may extend into tract.	Further study required	Moderate
Wildlife	Antelope common except in canyons; mule deer abundant; critical elk winter range. Sage grouse nest on tract; lek is outside; wild turkeys in bottomlands; buffers extend into tract for two golden eagle nests west of tract. One prairie dog town.	Some poaching and road kills; smoother topography would lower post-mining deer populations. Loss of about 30% of sage grouse nesting and brooding areas, some favored turkey habitat. Buffers would protect eagle nests but prey would be lost if no ferrets are present and prairie dog town destroyed.	High for elk, moderate for sage grouse, low for most other species
Cultural resources	Two prehistoric sites identified. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Visual resources	Area rated Class IV	Class would change to V during mining. Class IV would be restored afterward, but reclaimed areas would be smoother and gentler than present landscape.	High
Wilderness/Special management areas	None		
Unsuitability criteria	One prairie dog town; buffers for two golden eagle nests that are west of tract; crucial elk winter range; possible alluvial valley floor.	Prairie dog town would have to be inventoried for ferrets before mining could begin. Elk winter habitat and eagle buffers unsuitable for mining. OSM determination pending on possible AVF.	High
LAND USES			
Major uses	Grazing, some crops	Disturbance of 201 acres per year	Low
Oil and gas	None on tract		
Transportation	Echeta road and railroad at east edge; 0.8 mile of road crosses tract.	Road in tract would be relocated. Echeta road would carry 215 vehicles a day. About 4.5 trains a day on rail loop.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-3	Assumes that all 511 acres to be disturbed annually would be devoted to the support of cattle. (This includes 310 acres for mine facilities.)	Low
			-7	Assumes that all 90 acres of cropland on the tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-7	Assumes that all 90 acres of cropland on the tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-7	Assumes that all 90 acres of cropland on the tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-7	Assumes that all 90 acres of cropland on the tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	---	24,500	430 more jobs	26,600	430 more jobs	Low; less than 2% in 1990
Population	Gillette	12,134	16,200	---	23,500	410 more persons	25,000	410 more persons	Low; less than 2% in 1990


R 75 W
Twentymile Butte
R 74 W
T 52 N
T 51 N
35
36
1
6
5
7
8
9
18
17
16
20
21
Mooney Draw
Barker Draw
Wild Horse Creek
Echeta Road
Felix Draw
Hay Creek
0
1
2
3
4
5 MILES

Surface Ownership

▨ Federal

■ State

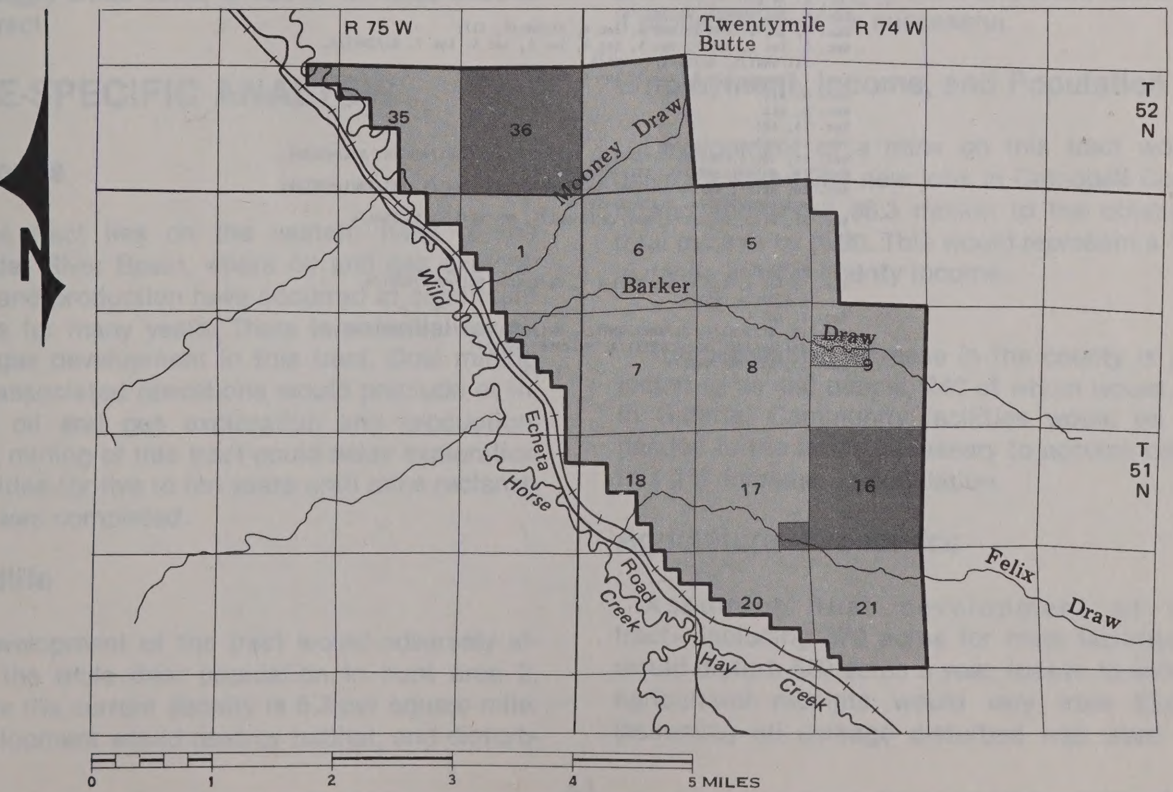
▨ Private

Coal Ownership

▨ Federal

■ State

▨ Private


R 75 W
Twentymile Butte
R 74 W
T 52 N
T 51 N
35
36
1
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8
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18
17
16
20
21
Mooney Draw
Barker Draw
Wild Horse Creek
Echeta Road
Felix Draw
Hay Creek
0
1
2
3
4
5 MILES

Twentymile Butte

LEGAL DESCRIPTION

TWENTYMILE BUTTE TRACT

Federal Uncommitted

T. 52 N., R. 74 W.
Sec. 31, lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2

T. 52 N., R. 75 W.
Sec. 34, N1/2NE1/4NE1/4
Sec. 35, N1/2NW1/4, SE1/4NW1/4, E1/2

T. 51 N., R. 74 W.
Sec. 4, SE1/4NW1/4, E1/2SW1/4
Sec. 5, lot 1, lot 2, lot 3, lot 4, S1/2N1/2, S1/2
Sec. 6, lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4
Sec. 7, lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 8, All
Sec. 9, NE1/4, N1/2NW1/4, S1/2
Sec. 17, N1/2, SW1/4, W1/2SE1/4, NE1/4SE1/4
Sec. 18, lot 1, NE1/4, E1/2NW1/4, N1/2SE1/4, E1/2SW1/4SE1/4, SE1/4SE1/4
Sec. 19, N1/2NE1/4NE1/4, SE1/4NE1/4NE1/4
Sec. 20, NE1/4, N1/2NW1/4, NW1/4SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4SE1/4, NW1/4NE1/4SE1/4, E1/2NE1/4SE1/4
Sec. 21, N1/2, N1/2S1/2, NE1/4SW1/4SW1/4, SE1/4SW1/4, S1/2SE1/4

T. 51 N., R. 75 W.
Sec. 1, lot 1, lot 2, lot 3, lot 4, S1/2N1/2, SE1/4, E1/2SW1/4, NE1/4NW1/4SW1/4
Sec. 2, lot 1
Sec. 12, N1/2NE1/4, E1/2NE1/4NW1/4, NW1/4SW1/4NE1/4, E1/2SW1/4NE1/4, SE1/4NE1/4, E1/2E1/2SE1/4, NW1/4NE1/4SE1/4
Sec. 13, E1/2NE1/4NE1/4

Total Tract

T. 52 N., R. 74 W.
Sec. 31, lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2

T. 52 N., R. 75 W.
Sec. 34, N1/2NE1/4NE1/4
Sec. 35, N1/2NW1/4, SE1/4NW1/4, E1/2
Sec. 36, All

T. 51 N., R. 74 W.
Sec. 4, SW1/4NW1/4, W1/2SW1/4
Sec. 5, lot 1, lot 2, lot 3, lot 4, S1/2N1/2, S1/2
Sec. 6, lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, Lot 7, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, SE1/4
Sec. 7, lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 8, All
Sec. 9, All
Sec. 16, All
Sec. 17, All
Sec. 18, lot 1, NE1/4, E1/2NW1/4, N1/2SE1/4, E1/2SW1/4SE1/4, SE1/4SE1/4
Sec. 19, N1/2NE1/4NE1/4, SE1/4NE1/4NE1/4
Sec. 20, NE1/4, N1/2NW1/4, NW1/4SW1/4NW1/4, SE1/4NW1/4, NE1/4NW1/4SE1/4, NW1/4NE1/4SE1/4, E1/2NE1/4SE1/4
Sec. 21, N1/2, N1/2S1/2, NE1/4SW1/4SW1/4, SE1/4SW1/4, S1/2SE1/4

T. 51 N., R. 75 W.
Sec. 1, lot 1, lot 2, lot 3, lot 4, S1/2N1/2, NE1/4NW1/4SW1/4, E1/2SW1/4, SE1/4
Sec. 2, lot 1
Sec. 12, N1/2NE1/4, E1/2NE1/4NW1/4, NW1/4SW1/4NE1/4, E1/2SW1/4NE1/4, SE1/4NE1/4, E1/2E1/2SE1/4, NW1/4NE1/4SE1/4
Sec. 13, E1/2NE1/4NE1/4

TWENTYMILE BUTTE

The Twentymile Butte tract is approximately 10 miles northwest of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 129 million tons of recoverable federal coal in this tract amounts to about 2% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 159 million tons. The estimated annual production at full capacity would be 5.3 million tons.

The Felix coal seam is the only economically recoverable seam of subbituminous coal. It averages 22 feet thick. The average overburden thickness is 200 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. The Burlington Northern Railroad borders the tract on the west. The nearest active mine is the Eagle Butte Mine, which is 10 miles east of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development in this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would adversely affect the mule deer population in hunt area 2, where the current density is 6.3 per square mile. Development would destroy habitat, and disturbance and poaching would increase. Wild turkey habitat would be lost. A buffer zone for a golden eagle nest east of the tract overlaps a small part of the tract. This buffer zone is unsuitable for mining.

Cultural Resources

The tract has not been inventoried for cultural resources; however, it is known to contain three historic sites. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archelogical or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are fine textured (more than 35% clay). The depth to soft shale ranges from less than 20 inches to more than 40 inches. Rock outcrops are common on the side slopes of the numerous draws. The average annual precipitation is 13 inches; the average growing season is 111 days. On the basis of these factors, it appears that reclamation would be more difficult and expensive than on the flat terrain; however, it probably would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 250 new jobs in Campbell County and add about $6.3 million to the county"s total income by 1990. This would represent a 1% increase in total county income.

The population increase in the county is projected to be 480 people, 240 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 2% increase in population.

Agricultural Economics

Assuming that development of the tract—including 370 acres for mine facilities—would disturb 520 acres a year, losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $6,000 (assuming acreage was used for hay and cattle production). A maximum of 1,270 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor along Wild Horse Creek. The OSM and Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
TWENTYMILE BUTTE COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	8,598	
COAL INFORMATION		
Coal quality	Subbituminous; 8,186 BTUs per pound, 0.69% sulfur	
Recoverable reserves	159 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	1.6 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,186 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 217 to 1 for the Twentymile Butte tract.	

EFFECTS OF LEASING AND DEVELOPMENT

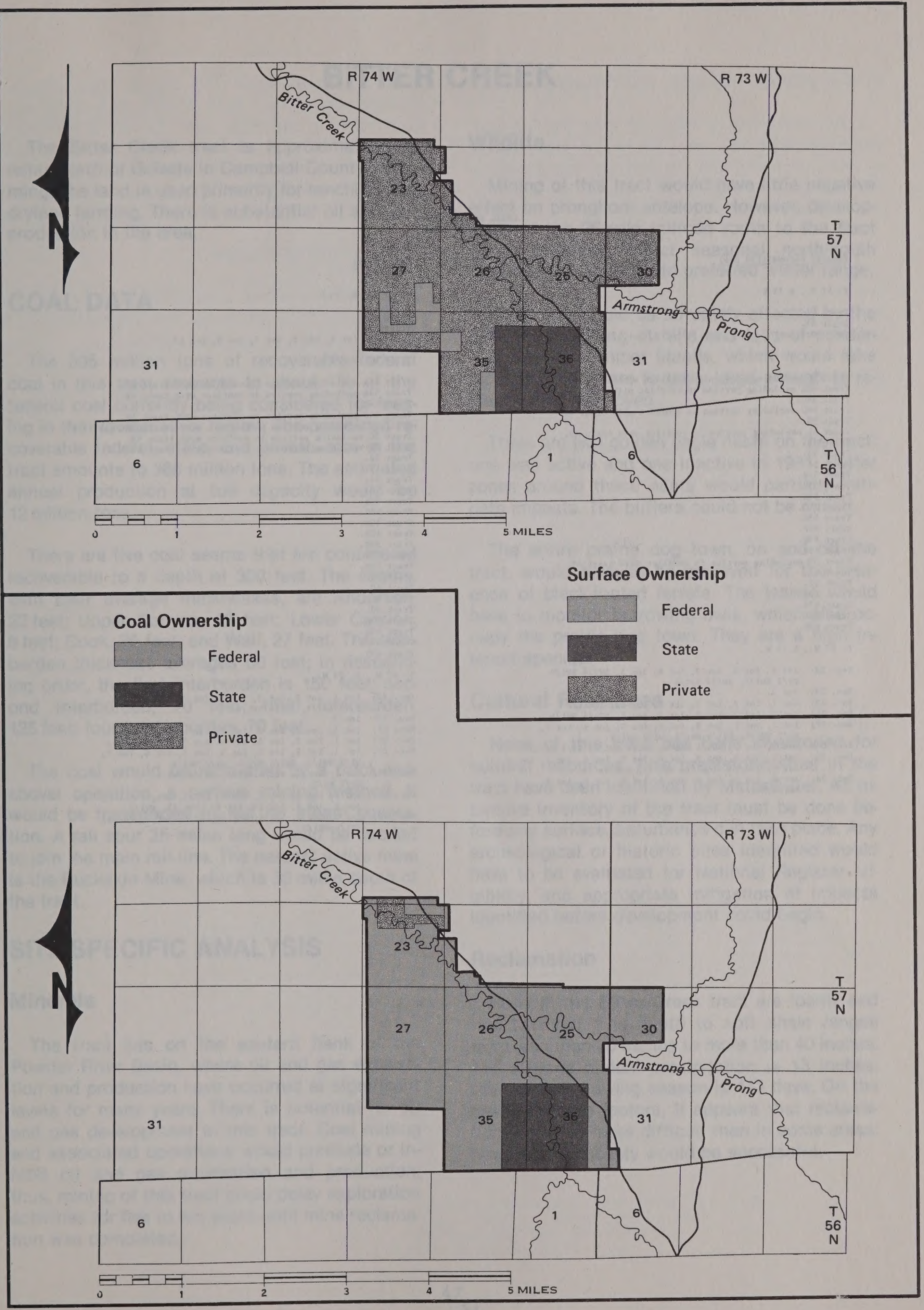
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990 and 1995; of same plus federal primary 24-hour standard during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Steep, rough topography and shallow soils make reclamation difficult. Potential fair.	Moderate
Groundwater	Wasatch and Fort Union formations	Destruction of wells completed in Watsatch. Wells destroyed could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Some livestock reservoirs; streams are intermittent	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF along Wild Horse Creek may extend into tract.	Further study required	Moderate
Wildlife	Antelope common; mule deer abundant; some elk habitat. Wild turkeys in bottomlands; buffer for golden eagle nest north of tract extends into tract.	Better habitat for antelope, poorer for deer after mining. Loss of some favored turkey areas; buffer would protect eagle nest but some prey would be lost.	Low
Cultural resources	Three known sites on tract. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining. Class IV would be restored afterward, but reclaimed areas would be smoother and gentler than present landscape.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Buffer for one golden eagle nest that is north of tract. Possible alluvial valley floor.	Eagle buffer could not be mined. OSM determination pending on possible AVF.	Moderate
LAND USES			
Major uses	Grazing, some crops	Disturbance of 150 acres per year	Low
Oil and gas	None on tract		
Transportation	Railroad and Echeta road are just west of tract.	Access road to be built would carry 130 vehicles a day. Three trains a day would use rail loop.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-3	Assumes that all 520 acres to be disturbed annually would be devoted to the support of cattle. (This includes 370 acres for mine facilities.)	Low
			-6	Assumes that all 60 acres of cropland on the tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-6	Assumes that all 60 acres of cropland on the tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-6	Assumes that all 60 acres of cropland on the tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-6	Assumes that all 60 acres of cropland on the tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	---	24,500	250 more jobs	26,600	250 more jobs	Low; less than 2% increase in 1990
Population	Gillette	12,134	16,200	---	23,500	240 more persons	25,000	240 more persons	Low; less than 2% increase in 1990


R 74 W
R 73 W
Bitter Creek
Armstrong Prong
23
27
26
25
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36
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T 57 N
T 56 N
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1
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4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private
R 74 W
R 73 W
Bitter Creek
Armstrong Prong
23
27
26
25
30
35
36
31
31
6
1
6
T 57 N
T 56 N
0
1
2
3
4
5 MILES

Bitter Creek

LEGAL DESCRIPTION
BITTER CREEK TRACT

Federal Uncommitted Coal

T. 57 N., R 73 W.

Tract 42.
Tract 45.
Sec. 30: lot 5, lot 6, lot 7, lot 8, lot 13.

T. 57 N., R. 74 W.

Tract 44 excluding portion in conflict with tract 48.
Tract 44B excluding portion in conflict with tract 48.
Tract 44C.
Tract 44D excluding portion in conflict with tract 48.
Tract 50.
Tract 51 excluding portion in conflict with tract 49.
Tract 52.
Tract 53.
Tract 54.
Tract 55A.
Tract 55B.
Tract 55C.
Tract 55D.
Tract 55E.
Tract 55F.
Tract 55G.
Tract 55H.
Tract 60 excluding portion in conflict with tract 48.
Tract 61.
Tract 62.
Tract 63A.
Tract 63B.
Tract 63C.
Tract 63D.

T. 57 N., R 74 W.

Sec. 22: lot 1, lot 2, lot 3, lot 4, lot 5, NW1/4 SW1/4, S1/2 SW1/4, SW1/4 SE1/4.
Sec. 23: lot 3.
Sec. 25: lot 1, lot 2, lot 3, lot 9, lot 10, lot 11.
Sec. 26: lot 1, lot 2, lot 3, lot 4, lot 5, SE1/4 SW1/4.
Sec. 27: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, N1/2 NW1/4, SW1/4 NW1/4, W1/2 SW1/4.
Sec. 34: lot 1, lot 2, NE1/4 NE1/4, NW1/4 NW1/4, S1/2 N1/2.
Sec. 35: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, lot 8, lot 9, lot 10, lot 11, lot 12, NW1/4.
Sec. 36: lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, lot 8, SE1/4 NE1/4.

Total Tract

T. 57 N., R. 73 W.

Tract 42.
Tract 45.
Sec. 30: lot 5, lot 6, lot 7, lot 8, lot 13.

T. 57 N., R. 74 W.

Tract 44A excluding portion in conflict with tract 48.
Tract 44B excluding portion in conflict with tract 48.
Tract 44C.
Tract 44D excluding portion in conflict with tract 48.
Tract 48 excluding portion in conflict with tracts 58A and 58 B.
Tract 50 excluding portion in conflict with tract 48.
Tract 51 excluding portion in conflict with tract 49.
Tract 52.
Tract 53.
Tract 54.
Tract 55A.
Tract 55B.
Tract 55C.
Tract 55D.
Tract 55E.
Tract 55F.
Tract 55G.
Tract 55H.
Tract 56.
Tract 60.
Tract 61.
Tract 62.
Tract 63A.
Tract 63B.
Tract 63C.
Tract 63D.

T. 57 N., R. 74 W.

Sec. 22: lot 1, lot 2, lot 3, lot 4, lot 5, NW1/4 SW1/4, S1/2 SW1/4, SW1/4 SE1/4.
Sec. 23: lot 3.
Sec. 25: lot 1, lot 2, lot 3, lot 9, lot 10, lot 11.
Sec. 26: lot 1, lot 2, lot 3, lot 4, lot 5, SE1/4 SW1/4.
Sec. 27: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, N1/2 NW1/4, SW1/4 NW1/4, W1/2 SW1/4.
Sec. 34: lot 1, lot 2, NE1/4 NE1/4, NW1/4 NW1/4, S1/2 N1/2.
Sec. 35: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, lot 8, lot 9, lot 10, lot 11, lot 12, NW1/4.
Sec. 36: lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, lot 8, SE1/4 NE1/4.

BITTER CREEK

The Bitter Creek tract is approximately 40 miles north of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is substantial oil and gas production in the area.

COAL DATA

The 305 million tons of recoverable federal coal in this tract amounts to about 4% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 368 million tons. The estimated annual production at full capacity would be 12 million tons.

There are five coal seams that are considered recoverable to a depth of 300 feet. The seams, with their average thicknesses, are Anderson, 22 feet; Upper Canyon, 13 feet; Lower Canyon, 9 feet; Cook, 26 feet; and Wall, 27 feet. The overburden thickness averages 60 feet; in descending order, the first interburden is 150 feet; second interburden, 70 feet; third interburden, 125 feet; fourth interburden, 70 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 35 miles long would be needed to join the main rail line. The nearest active mine is the Buckskin Mine, which is 30 miles south of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development in this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Mining of this tract would have little negative effect on pronghorn antelope. However, development of the 35-mile railroad route to the tract would adversely affect seasonal north-south movement of antelope to preferred winter range.

Mule deer would be adversely affected by the general smoothing of hills and loss of ponderosa pine and juniper stands, which would take more than 30 years to grow large enough to replace those destroyed.

There are two golden eagle nests on the tract; one was active and one inactive in 1981. Buffer zones around these nests would partially mitigate impacts. The buffers could not be mined.

The entire prairie dog town, on and off the tract, would have to be surveyed for the presence of black-footed ferrets. The lessee would have to monitor burrowing owls, which also occupy the prairie dog town. They are a high interest species.

Cultural Resources

None of this tract has been inventoried for cultural resources. Five prehistoric sites in the tract have been identified by Metcalf-Zier. An intensive inventory of the tract must be done before any surface disturbance can take place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils in the Bitter Creek tract are loamy and fine textured. The depth to soft shale ranges from less than 20 inches to more than 40 inches. The average annual precipitation is 13 inches; the average growing season is 111 days. On the basis of these factors, it appears that reclamation would be more difficult than in some areas; however, it probably would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 610 new jobs in Campbell County and add about $15.3 million to the county's total income by 1990. This would represent a 3% increase in total county income.

The population increase in the county is projected to be 1,180 people, 590 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 6% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 481 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $25,000 (assuming all acreage was used for wheat production). A maximum of 1,286 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a possible alluvial valley floor along Bitter Creek. The OSM and the Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
BITTER CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	4,710	
COAL INFORMATION		
Coal quality	Lignite A; 7,710 BTUs per pound, 0.4% sulfur	
Recoverable reserves	368 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	4.98 : 1	
Net energy analysis	One pound of coal from this tract would produce 7,710 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 204.5 to 1 for the Bitter Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

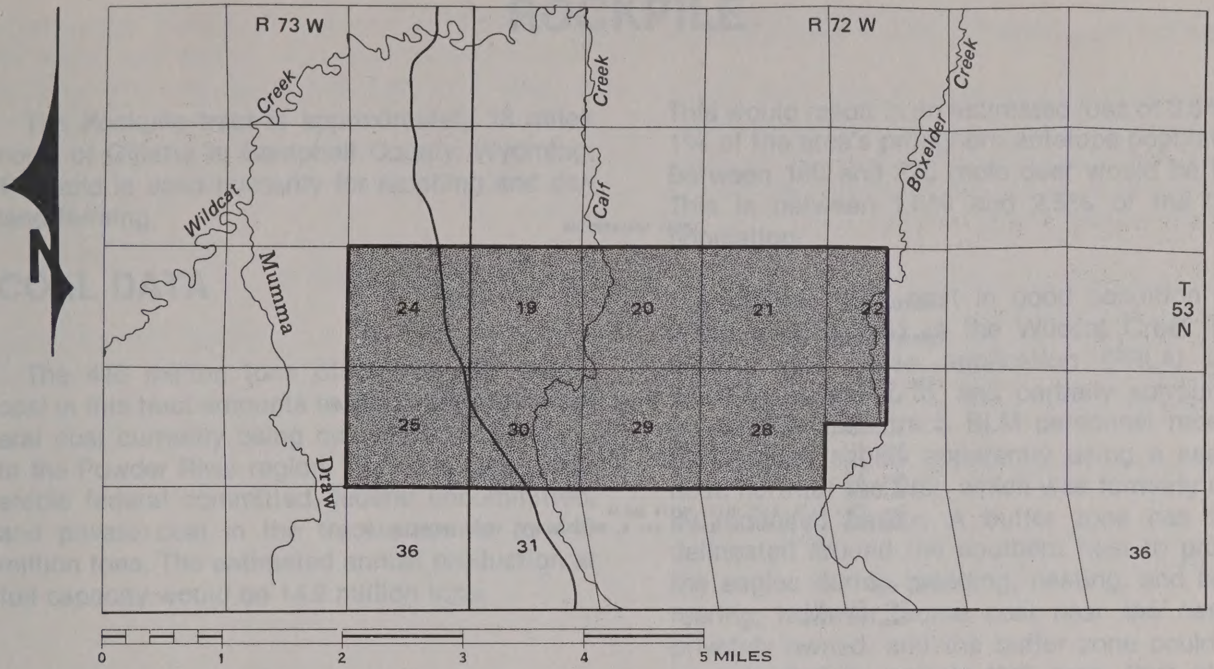
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1995 and during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Soils on this tract are shallow. Potential fair.	Moderate
Groundwater	Fort Union Formation. Some livestock wells.	Destruction of shallow wells. Wells destroyed could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Several livestock ponds; no perennial streams	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Low
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope and mule deer present; two golden eagle nests; large prairie dog town on tract; burrowing owl nest near tract in this prairie dog town.	Smoother topography after mining would be better habitat for antelope, poorer for deer. Rail spur outside tract could affect antelope seasonal movement. If no ferrets are present and prairie dog town destroyed, prey for raptors and owls would be lost. Owls' nest burrows could collapse from blasting. Buffers would protect eagle nests.	Low for deer and antelope, low for eagles, moderate for owls
Cultural resources	Five prehistoric sites have been identified. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining. Class IV would be restored afterward, but reclaimed areas would be smoother and gentler than present landscape.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Large prairie dog town, buffers for two golden eagle nests; burrowing owls nest in prairie dog town just outside of tract, possible alluvial valley floor.	Prairie dog town would have to be inventoried for ferrets before mining could begin. Eagle buffers could not be mined. OSM determination pending on possible AVF.	High
LAND USES			
Major uses	Grazing, some crops; two occupied dwellings	Disturbance of 161 acres per year; dwellings would be removed.	Low
Oil and gas	None on tract		
Transportation	Graveled road crosses tract. U.S. 14-16 is 25 miles south; railroad 35 miles away.	Road in tract would be moved. Increase of 380 vehicles a day on county road; six trains a day would use rail spur.	High

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-3	Assumes that all 481 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-24	Assumes that all 481 acres to be disturbed annually would be devoted to barley.	Low
			-25	Assumes that all 481 acres to be disturbed annually would be devoted to oats.	Low
			-25	Assumes that all 481 acres to be disturbed annually would be devoted to wheat.	Low
			-24	Assumes that all 481 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	610 more jobs	26,600	610 more jobs	Low; increase of 2.5%
Population	Gillette	12,134	16,200	—	23,500	590 more persons	25,500	590 more persons	Low; increase of 2.5%


R 73 W
R 72 W
Wildcat Creek
Mumma Draw
Calf Creek
Boxelder Creek
24
19
20
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22
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30
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28
36
31
36
T 53 N
0
1
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5 MILES

Surface Ownership

▨ Federal (none on this map)

▨ State (none on this map)

▨ Private

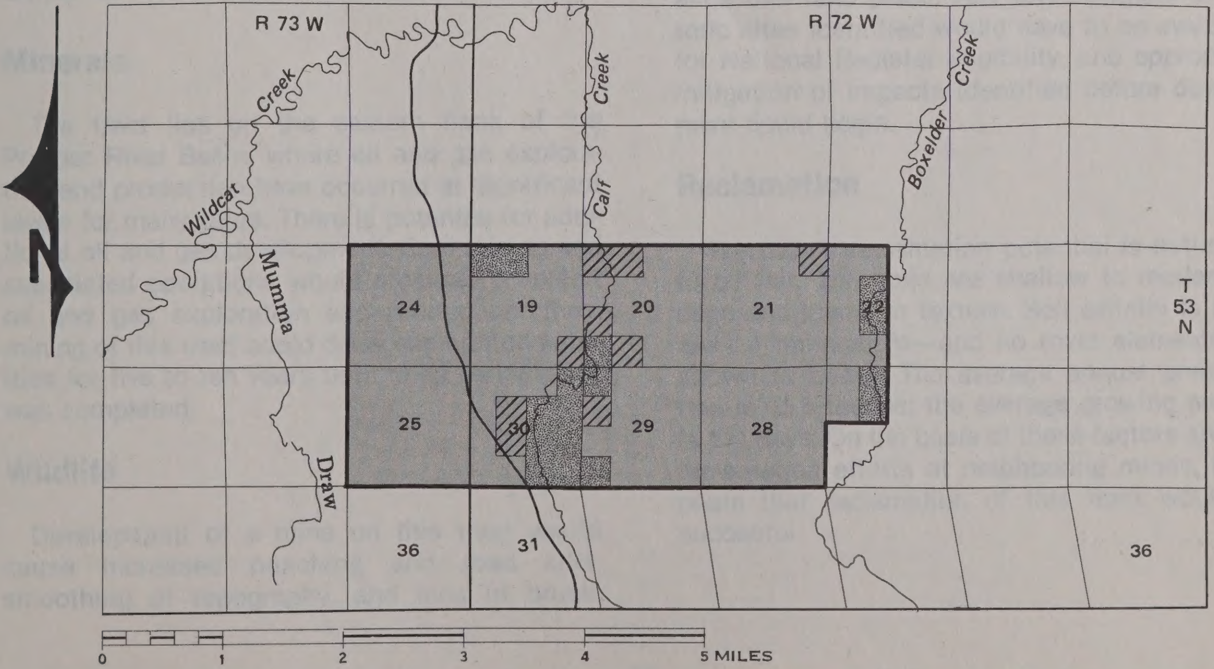
Coal Ownership

▨ Federal

▨ State (none on this map)

▨ Private

▨ Committed Federal


R 73 W
R 72 W
Wildcat Creek
Mumma Draw
Calf Creek
Boxelder Creek
24
19
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25
30
29
28
36
31
36
T 53 N
0
1
2
3
4
5 MILES

Rockpile

LEGAL DESCRIPTION

ROCKPILE

Federal Uncommitted Coal

T53N, R72W
Sec. 19: lot 2, lot 3, lot 4, NE1/4, SE1/4 NW1/4, E1/2 SW1/4, W1/2 SE1/4, NE1/4 SE1/4.
Sec. 20: E1/2, S1/2 NW1/4, NE1/4 SW1/4.
Sec. 21: SE1/4 NE1/4, W1/2 NE1/4, W1/2, SE1/4.
Sec. 22: N1/2 NW1/4, SW1/4 NW1/4, NW1/4 SW1/4, S1/2 SW1/4.
Sec. 27: W1/2 NW1/4.
Sec. 28: All.
Sec. 29: E1/2, E1/2 W1/2, NW1/4 SW1/4.
Sec. 30: lot 1, lot 2, lot 3, lot 4, NW1/4 NE1/4, NE1/4 NW1/4, SE1/4 SW1/4.

T53N, R73W
Sec. 24: All.
Sec. 25: All.

Total Tract

T53N, R72W
Sec. 19: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 20: All.
Sec. 21: All.
Sec. 22: W1/2.
Sec. 27: NW1/4.
Sec. 28: All.
Sec. 29: All.
Sec. 30: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.

T53N, R73W
Sec. 24: All.
Sec. 25: All.

ROCKPILE

The Rockpile tract is approximately 18 miles north of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming.

COAL DATA

The 418 million tons of recoverable federal coal in this tract amounts to about 6% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal committed, federal uncommitted, and private coal in the tract amounts to 446 million tons. The estimated annual production at full capacity would be 14.9 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal in this tract. Its average thickness is 90 feet; thickness of overburden averages 100 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 9.5 miles long would be needed to join the main rail line. The nearest active mine is the Buckskin Mine, which is 7 miles south of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for additional oil and gas development. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would cause increased poaching and road kills, smoothing of topography, and loss of brush. This would result in an estimated loss of 0.5% to 1% of the area's pronghorn antelope population. Between 180 and 275 mule deer would be lost. This is between 1.6% and 2.5% of the base population.

A golden eagle nest in good condition was discovered in 1981 in the Wildcat Creek preference right lease application (PRLA) area, which is adjacent to, and partially surrounded by, the Rockpile tract. BLM personnel recently saw golden eagles apparently using a second nest, north of the first, which was formerly used by red-tailed hawks. A buffer zone has been delineated around the southern nest to protect the eagles during breeding, nesting, and brood rearing; however, some coal near the nest is privately owned, and the buffer zone could not be extended to include that area. Part of the Rockpile tract is included in the buffer zone, which is unsuitable for mining. Since private coal could be mined to within 100 yards of the nest, disturbance of the eagles still might occur. If further investigation indicates that the northern eagle nest is still active, a buffer zone may need to be established to protect that nest.

Cultural Resources

None of the tract has been inventoried for cultural resources. An intensive inventory of the tract must be done before any surface disturbance can take place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

The tract's reclamation potential is estimated to be fair. The soils are shallow to moderately deep and loamy in texture. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15.5 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be succesful.

Employment, Income, and Population

Development of a mine on this tract would generate about 750 new jobs in Campbell County and add about $18.7 million to the county's total income by 1990. This would represent a 4% increase in total county income.

The population increase in the county is projected to be 1,440 people, 720 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 505 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $27,000 (assuming all acreage was used for wheat production). A maximum of 1,430 acres would be removed from production at any one time.

Alluvial Valley Floors

This tract contains potential alluvial valley floors. The OSM and the Wyoming DEQ have been asked to evaluate these areas.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
ROCKPILE COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	5.585	
COAL INFORMATION		
Coal quality	Subbituminous; 7,800 BTUs per pound, 0.5% sulfur	
Recoverable reserves	446 million tons	
Recovery rate	85%	
Maintenance tract or new production	New production	
Stripping ratio	2.4 : 1	
Net energy analysis	One pound of coal from this tract would produce 7,800 BTUs. About 38 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 207 to 1 for the Rockpile tract.	

EFFECTS OF LEASING AND DEVELOPMENT

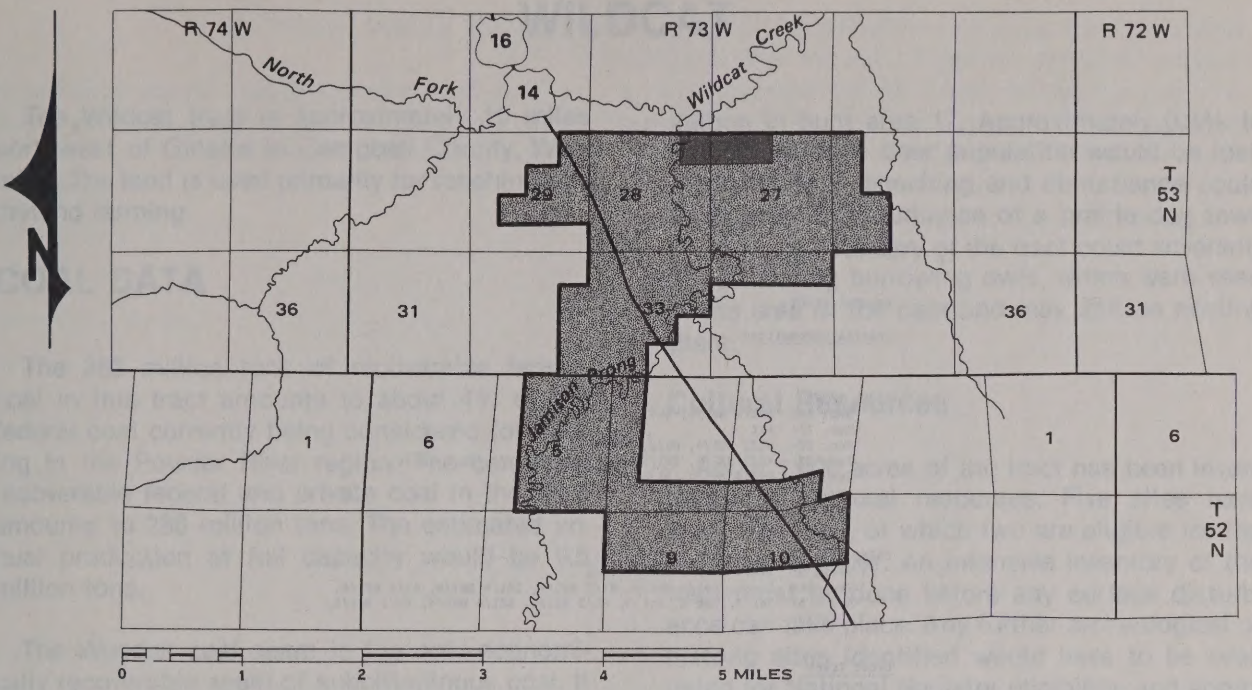
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential fair--steep slopes throughout tract would make reclamation more difficult than in other areas.	Moderate
Groundwater	Two domestic wells; springs; wells and pools for livestock	Destruction of springs, wells, pools, alluvial aquifer. Supplies could be replaced at greater cost by drilling deeper.	Low
Surface water	Water from 18 reservoirs used for livestock; aquatic habitat; irrigation downstream from tract	During mining, loss of livestock and wildlife supply, aquatic habitat; decrease in supply for irrigation downstream. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope common on west half of tract; mule deer abundant east half and in Little Powder River valley, where access road and railroad would be, common elsewhere; white-tailed deer in valley; nests of great horned owl and two red-tailed hawk pairs. Two golden eagle nests on PRLA partially surrounded by tract, buffer for one extends into tract; other may have buffer after more investigation.	Antelope loss of 0.5% to 1% of population through poaching and loss of sagebrush (poorer winter habitat); deer loss of 1.6% to 2.5% of population through poaching, road kills, smoothing of habitat, loss of browse species. Loss of raptor prey and one hawk nest; hawks might resettle; owls probably displaced. Buffer zones for eagle nests do not apply to private coal, so eagles might be disturbed if nearby private coal was mined.	Moderate for antelope; high for deer, low for other wildlife
Cultural resources	No surveys done yet. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will will be determined during inventory, and Section 106 of National Historic Preservation Act complied with.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward.	Low
Wilderness/Special management areas	None		
Unsuitability criteria	Rights-of-way exist for county road, pipeline, and power line. Possible alluvial valley floor. Buffer zone established for one golden eagle nest; another may be needed if second nest still active.	Exception applied--road, pipeline, and power line would be moved. OSM determination pending on possible AVF. Eagle buffers could not be mined, but not applicable to private coal nearby, so eagles could be disturbed if mining took place there.	High
LAND USES			
Major uses	Grazing, some crops	Disturbance of 185 acres per year	Low
Oil and gas	None on tract		
Transportation	Road runs through west part of tract	Increase of 65 to 190 vehicles a day on Wyo. 59 and access road; increase of 7 unit trains a day	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-3	Assumes that all 505 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-25	Assumes that all 505 acres to be disturbed annually would be devoted to barley.	Low
			-26	Assumes that all 505 acres to be disturbed annually would be devoted to oats.	Low
			-27	Assumes that all 505 acres to be disturbed annually would be devoted to wheat.	Low
			-25	Assumes that all 505 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	750 more jobs	26,600	750 more jobs	Low; 3% in 1990
Population	Gillette	12,134	16,200	—	23,500	720 more persons	25,000	720 more persons	Low; 3% in 1990


R 74 W
R 73 W
R 72 W
North Fork
Wildcat Creek
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T 52 N
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Jamison Prong
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5 MILES

Surface Ownership

▒ Federal (none on this map)

■ State

░ Private

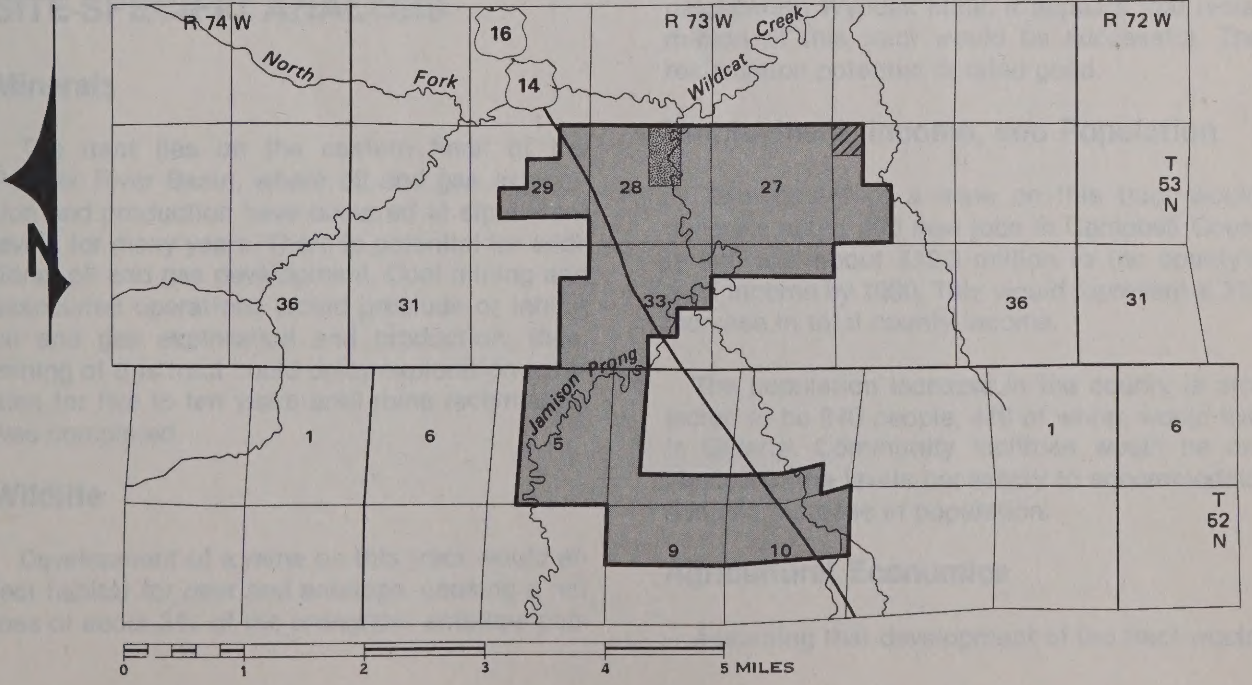
Coal Ownership

▒ Federal

■ State (none on this map)

░ Private

▨ Committed Federal


R 74 W
R 73 W
R 72 W
North Fork
Wildcat Creek
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T 53 N
T 52 N
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31
Jamison Prong
1
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5 MILES

Wildcat

LEGAL DESCRIPTION

WILDCAT TRACT

Federal Uncommitted

T53N, R73W
Sec. 26: SW1/4 NW1/4, SW1/4.
Sec. 27: All.
Sec. 28: E1/2 NE1/4, W1/2, SE1/4.
Sec. 29: E1/2 NE1/4, SW1/4 NE1/4, NE1/4 SW1/4, N1/2 SE1/4.
Sec. 32: SE1/4 NE1/4, E1/2 SE1/4.
Sec. 33: N1/2, SW1/4, NW1/4 SE1/4.
Sec. 34: N1/2 N1/2.

T52N, R73W
Sec. 3: SW1/4 SE1/4, S1/2 SW1/4.
Sec. 4: lot 4, SW1/4 NW1/4, W1/2 SW1/4, SE1/4 SW1/4, S1/2 SE1/4.
Sec. 5: lot 1, lot 2, lot 3, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.

Total Tract

T53N, R73W
Sec. 26: W1/2 NW1/4, SW1/4.
Sec. 27: All.
Sec. 28: All.
Sec. 29: E1/2 NE1/4, SW1/4 NE1/4, NE1/4 SW1/4, N1/2 SE1/4.
Sec. 32: SE1/4 NE1/4, E1/2 SE1/4.
Sec. 33: N1/2, SW1/4, NW1/4 SE1/4.
Sec. 34: N1/2 N1/2.

T52N, R73W
Sec. 3: SW1/4 SE1/4, S1/2 SW1/4.
Sec. 4: lot 4, SW1/4 NW1/4, W1/2 SW1/4, SE1/4 SW1/4, S1/2 SE1/4.
Sec. 5: lot 1, lot 2, lot 3, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 9: N1/2.
Sec. 10: N1/2.

WILDCAT

The Wildcat tract is approximately 15 miles northwest of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming.

COAL DATA

The 285 million tons of recoverable federal coal in this tract amounts to about 4% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and private coal in the tract amounts to 286 million tons. The estimated annual production at full capacity would be 9.5 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal. It averages 90 feet thick; the average overburden thickness is 100 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 12 miles long would be needed to join the main rail line. The nearest active mine is the Buckskin Mine, which is 5 miles southeast of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for additional oil and gas development. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would affect habitat for deer and antelope, causing a net loss of about 3% of the pronghorn antelope population in hunt area 17. Approximately 0.3% to 1% of the mule deer population would be lost. An increase in poaching and disturbance could be expected. Disturbance of a prairie dog town on the east boundary of the tract could adversely affect nesting burrowing owls, which were seen in the area in the past and may still be nesting there.

Cultural Resources

About 1,800 acres of the tract has been inventoried for cultural resources. Five sites have been identified, of which two are eligible for the National Register. An intensive inventory of the tract must be done before any surface disturbance can take place. Any further archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are moderately deep to deep, well drained, loamy, sandy and clayey. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15.5 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at the neighboring Wyodak Mine, it appears that reclamation of this tract would be successful. The reclamation potential is rated good.

Employment, Income, and Population

Development of a mine on this tract would generate about 490 new jobs in Campbell County and add about $12.3 million to the county's total income by 1990. This would represent a 3% increase in total county income.

The population increase in the county is projected to be 940 people, 470 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 2% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 455 acres a year—including 320 acres for mining facilites—losses to annual agricultural receipts would vary from $2,000 (assuming all acreage disturbed was used for cattle production) to $24,000 (assuming all acreage was used for wheat production). A maximum of 1,130 acres would be removed from production at one time.

Alluvial Valley Floors

There are potential alluvial valley floors in the tract. The OSM and the Wyoming DEQ have been asked to evaluate those areas.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
WILDCAT COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	4,085	
COAL INFORMATION		
Coal quality	Subbituminous; 7,800 BTUs per pound, 0.5% sulfur	
Recoverable reserves	286 million tons	
Recovery rate	85%	
Maintenance tract or new production	New production	
Stripping ratio	2.1 : 1	
Net energy analysis	One pound of coal from this tract would produce 7,800 BTUs. About 38 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 207 to 1 for the Wildcat tract.	

EFFECTS OF LEASING AND DEVELOPMENT

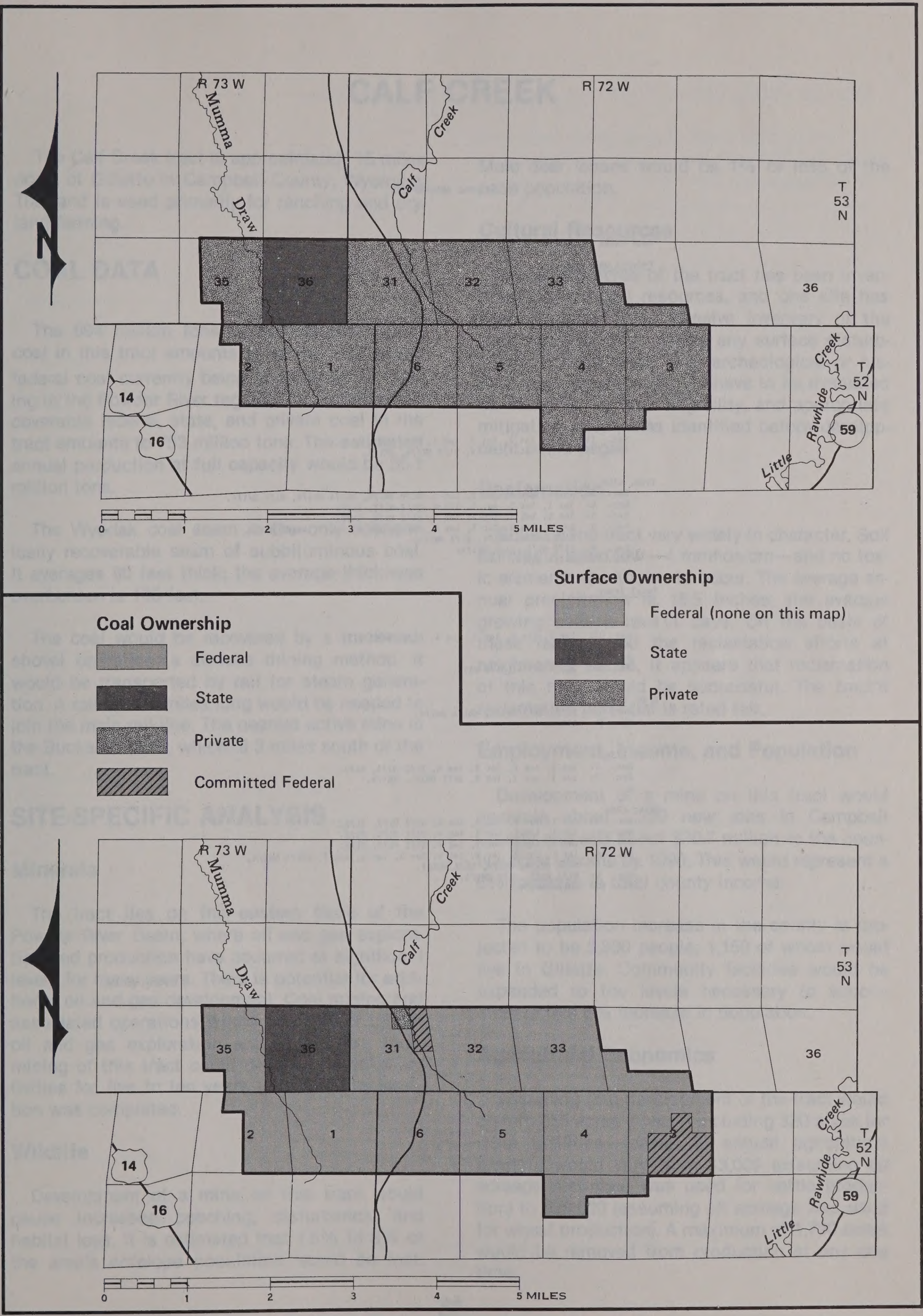
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential good	Low
Groundwater	Six domestic, three industrial, and 13 livestock wells; springs and pools for livestock	Destruction of wells, springs, alluvial aquifer. Supplies could be replaced at greater cost by drilling deeper.	Low
Surface water	Seven livestock reservoirs, irrigation downstream from tract; aquatic habitat	During mining, loss of livestock and wildlife supply and of aquatic habitat in reservoirs that have water for long periods; decrease in supply for irrigation downstream. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope common, some mule deer and furbearers; one nest each of burrowing owl, red-tailed hawk, and great horned owl. Prairie dog town on east boundary is potential habitat for black-footed ferrets, and may contain burrowing owl nests.	Net loss of 90 to 270 antelope, 35 to 110 deer. Habitat less useful for winter because of change from sage to grassland; railroad would be barrier to movement. Destruction of nests would displace hawks and great horned owls, possibly causing eventual loss of owls. If no ferrets are found, disturbance of prairie dog town could destroy burrowing owl nests.	Moderate
Cultural resources	About 1,800 acres have been surveyed, five sites identified. Two are eligible National Register.	Destruction of all sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Rights-of-way exist for U.S. 14-16 and county road. Prairie dog town is potential habitat for black-footed ferrets; possibly has burrowing owl nests. Possible alluvial valley floor.	Exception applied—roads would be moved. Prairie dog town would have to be inventoried for ferrets before mining could begin. OSM determination pending on possible AVF.	High
LAND USES			
Major uses	Grazing, some crops	Disturbance of 135 acres per year	Low
Transportation	U.S. 14-16 runs diagonally through tract for 4 miles; county road in tract for 2 miles.	Increase of 65 to 190 vehicles a day on U.S. 14-16. Rail traffic would increase by 5 unit trains a day.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-2	Assumes that all 455 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-23	Assumes that all 455 acres to be disturbed annually would be devoted to barley.	Low
			-23	Assumes that all 455 acres to be disturbed annually would be devoted to oats.	Low
			-24	Assumes that all 455 acres to be disturbed annually would be devoted to wheat.	Low
			-22	Assumes that all 455 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	490 more jobs	26,600	490 more jobs	Low; less than 2% in 1990
Population	Gillette	12,134	16,200	—	23,500	470 more persons	25,000	470 more persons	Low; less than 2% in 1990


R 73 W
R 72 W
Mumma Draw
Calf Creek
T 53 N
T 52 N
35
36
31
32
33
36
2
1
6
5
4
3
14
16
59
Rawhide Creek
Little
0
1
2
3
4
5 MILES
Surface Ownership
Federal (none on this map)
State
Private
Coal Ownership
Federal
State
Private
Committed Federal

Calf Creek

LEGAL DESCRIPTION

CALF CREEK TRACT

Federal Uncommitted

T53N, R72W
Sec. 31: lot 1, lot 2, lot 3, lot 4, SW1/4 NE1/4, E1/2 W1/2, SE1/4.
Sec. 32: All.
Sec. 33: All.
Sec. 34: NW1/4 SW1/4, S1/2 S1/2.

T53N, R73W
Sec. 35: E1/2, E1/2 NW1/4, NE1/4 SW1/4.

T52N, R73W
Sec. 1: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 2: lot 1, lot 2, lot 3, S1/2 NE1/4, SE1/4.

T52N, R72W
Sec. 3: lot 1, lot 2, lot 3, lot 4, S1/2 NW1/4, SE1/4 NE1/4, W1/2 SW1/4.
Sec. 4: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 6: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, SE1/4 NW1/4, S1/2 NE1/4, SE1/4, E1/2 SW1/4.
Sec. 9: N1/2 N1/2, S1/2 NW1/4.
Sec. 10: NW1/4 NW1/4.

Total Tract

T53N, R72W
Sec. 31: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 32: All.
Sec. 33: All.
Sec. 34: NW1/4 SW1/4, S1/2 S1/2.

T53N, R73W
Sec. 35: E1/2, E1/2 NW1/4, NE1/4 SW1/4.
Sec. 36: All.

T52N, R73W
Sec. 1: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 2: lot 1, lot 2, lot 3, S1/2 NE1/4, SE1/4.

T52N, R72W
Sec. 3: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 4: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 6: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, SE1/4 NW1/4, S1/2 NE1/4, SE1/4, E1/2 SW1/4.
Sec. 9: N1/2 N1/2, S1/2 NW1/4.
Sec. 10: NW1/4 NW1/4.

CALF CREEK

The Calf Creek tract is approximately 15 miles north of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming.

COAL DATA

The 694 million tons of recoverable federal coal in this tract amounts to about 10% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 753 million tons. The estimated annual production at full capacity would be 25.1 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal. It averages 90 feet thick; the average thickness overburden is 100 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 7 miles long would be needed to join the main rail line. The nearest active mine is the Buckskin Mine, which is 3 miles south of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for additional oil and gas development. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would cause increased poaching, disturbance, and habitat loss. It is estimated that 1.5% to 3% of the area's antelope population would be lost. Mule deer losses would be 1% or less of the base population.

Cultural Resources

About 720 acres of the tract has been inventoried for cultural resources, and one site has been identified. An intensive inventory of the tract must be done before any surface disturbance can take place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract vary widely in character. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15.5 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. The tract's reclamation potential is rated fair.

Employment, Income, and Population

Development of a mine on this tract would generate about 1,220 new jobs in Campbell County and add about $30.7 million to the county's total income by 1990. This would represent a 6% increase in total county income.

The population increase in the county is projected to be 2,300 people, 1,150 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 6% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 555 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $29,000 (assuming all acreage was used for wheat production). A maximum of 1,730 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor in the tract. The OSM and the Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
CALF CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	7,050	
COAL INFORMATION		
Coal quality	Subbituminous; 7,800 BTUs per pound, 0.5% sulfur	
Recoverable reserves	753 million tons	
Recovery rate	85%	
Maintenance tract or new production	New production	
Stripping ratio	1.6 : 1	
Net energy analysis	One pound of coal from this tract would produce 7,800 BTUs. About 38 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 207 to 1 for the Calf Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

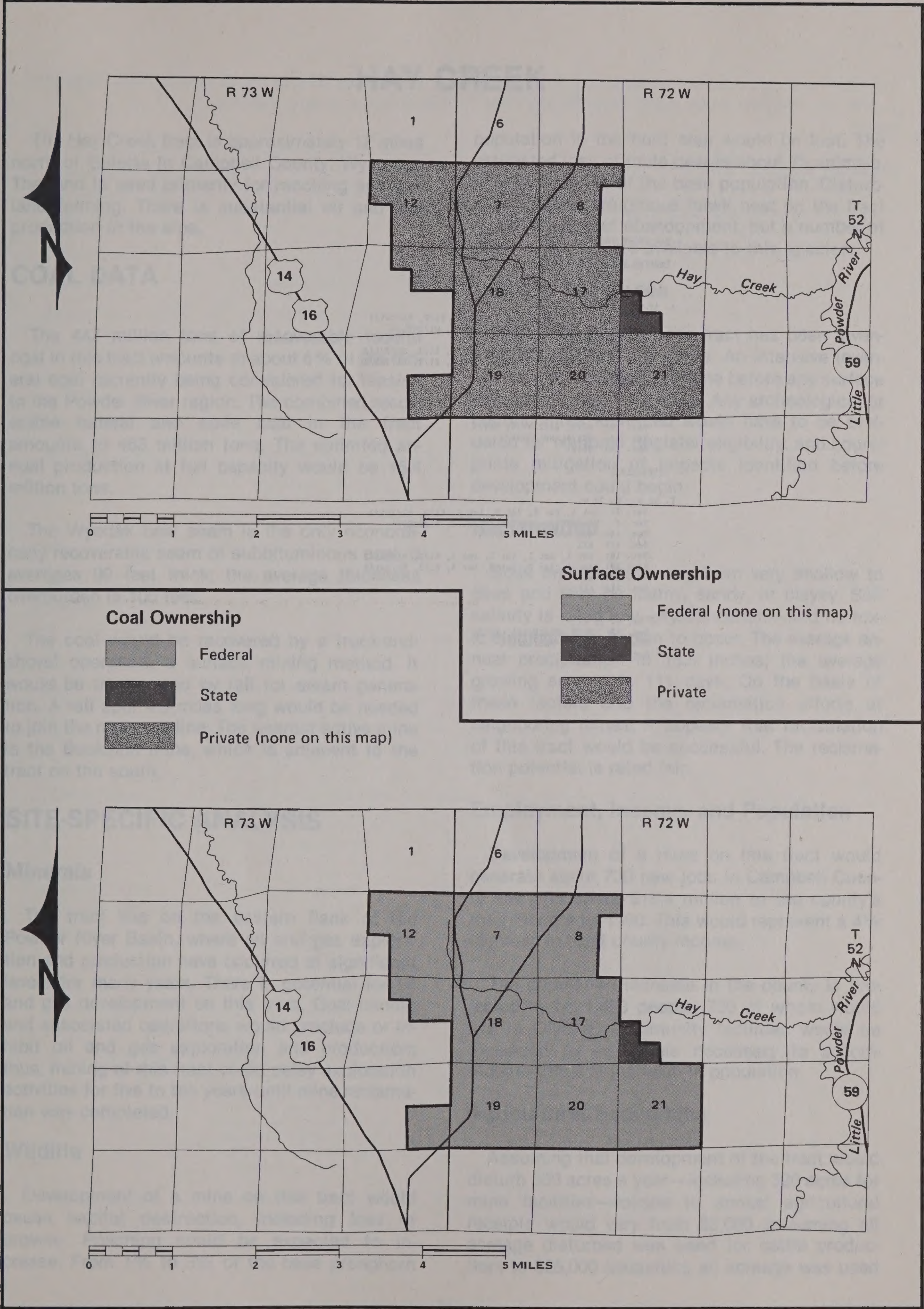
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential fair; lower on steep slopes in southeast part of tract than elsewhere	Low
Groundwater	Some domestic and livestock wells	Wells destroyed could be replaced at greater cost by drilling deeper	Low
Surface water	Livestock reservoirs; aquatic habitat; irrigation downstream from tract	During mining, loss of livestock and wildlife supply, aquatic habitat; decrease in supply for irrigation downstream. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope and mule deer common; bald eagles hunt on tract	Net loss of 135 antelope, 125 deer from hunt area population after mining; some eagle prey lost	Moderate
Cultural resources	About 720 acres have been surveyed; one site identified. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward	Low
Wilderness/Special management areas	None		
Unsuitability criteria	Rights-of-way exist for county road, power line, and pipeline	Exception applied--road, pipeline, and power line would be moved	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
LAND USES			
Major uses	Grazing, some crops; two occupied dwellings	Disturbance of 235 acres per year; dwellings would be relocated	Low
Oil and gas	None on tract		
Transportation	Two county roads run through tract	Increase of 97 to 285 vehicles a day on Wyo. 59 and access road; increase of 13 unit trains a day	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-3	Assumes that all 555 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-28	Assumes that all 555 acres to be disturbed annually would be devoted to barley.	Low
			-29	Assumes that all 555 acres to be disturbed annually would be devoted to oats.	Low
			-29	Assumes that all 555 acres to be disturbed annually would be devoted to wheat.	Low
			-28	Assumes that all 555 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	1,220 more jobs	26,600	1,220 more jobs	Low; less than 5% in 1990
Population	Gillette	12,134	16,200	—	23,500	1,150 more persons	25,000	1,150 more persons	Low; less than 5% in 1990


R 73 W
R 72 W
T 52 N
1
6
12
7
8
18
17
19
20
21
14
16
59
Hay Creek
Little Powder River
0 1 2 3 4 5 MILES
Surface Ownership
Federal (none on this map)
State
Private
Coal Ownership
Federal
State
Private (none on this map)

Hay Creek

LEGAL DESCRIPTION

HAY CREEK TRACT

Federal Uncommitted Coal

T. 52 N., R. 72 W.
Sec. 7: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 8: NE1/4NE1/4, W1/2NE1/4, W1/2, W1/2SE1/4
Sec. 17: All
Sec. 18: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 19: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 20: All
Sec. 21: All

T. 52 N., R. 73 W.
Sec. 12: N1/2, E1/2SW1/4, SE1/4
Sec. 13: NE1/4, NE1/4NW1/4
Sec. 24: SE1/4

Total Tract

T. 52 N., R. 72 W.
Sec. 7: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 8: NE1/4NE1/4, W1/2NE1/4, W1/2, W1/2SE1/4
Sec. 16: NW1/4SW1/4, S1/2SW1/4
Sec. 17: All
Sec. 18: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 19: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2W1/2
Sec. 20: All
Sec. 21: All

T. 52 N., R. 73 W.
Sec. 12: N1/2, E1/2SW1/4, SE1/4
Sec. 13: NE1/4, NE1/4NW1/4
Sec. 24: SE1/4

HAY CREEK

The Hay Creek tract is approximately 12 miles north of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is substantial oil and gas production in the area.

COAL DATA

The 447 million tons of recoverable federal coal in this tract amounts to about 6% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and state coal in the tract amounts to 463 million tons. The estimted annual production at full capacity would be 15.4 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal. It averages 90 feet thick; the average thickness overburden is 100 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 4.5 miles long would be needed to join the main rail line. The nearest active mine is the Buckskin Mine, which is adjacent to the tract on the south.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is potential for oil and gas development on this tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would cause habitat destruction, including loss of browse. Poaching could be expected to increase. From 1% to 3% of the base pronghorn population in the hunt area would be lost. The estimated loss of mule deer is about 75 animals, or less than 1% of the base population. Disturbance of one ferruginous hawk nest on the tract could cause nest abandonment, but a number of other nest sites are available to this species.

Cultural Resources

About 500 acres of the tract has been inventoried for cultural resources. An intensive inventory of the tract must be done before any surface disturbance can take place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on this tract vary from very shallow to deep and may be loamy, sandy, or clayey. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15.5 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. The reclamation potential is rated fair.

Employment, Income, and Population

Development of a mine on this tract would generate about 730 new jobs in Campbell County and add about $18.4 million to the county's total income by 1990. This would represent a 4% increase in total county income.

The population increase in the county is projected to be 1,400 people, 700 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 500 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $3,000 (assuming all acreage disturbed was used for cattle production) to $26,000 (assuming all acreage was used for wheat production). A maximum of 1,400 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor in the tract. The OSM and the Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
HAY CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	5,370	
COAL INFORMATION		
Coal quality	Subbituminous; 7,800 BTUs per pound; 0.5% sulfur	
Recoverable reserves	463 million tons	
Recovery rate	85%	
Maintenance tract or new production	New production	
Stripping ratio	2.6 : 1	
Net energy analysis	One pound of coal from this tract would produce 7,800 BTUs. About 38 BTUs would be expended to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 207 to 1 for the Hay Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

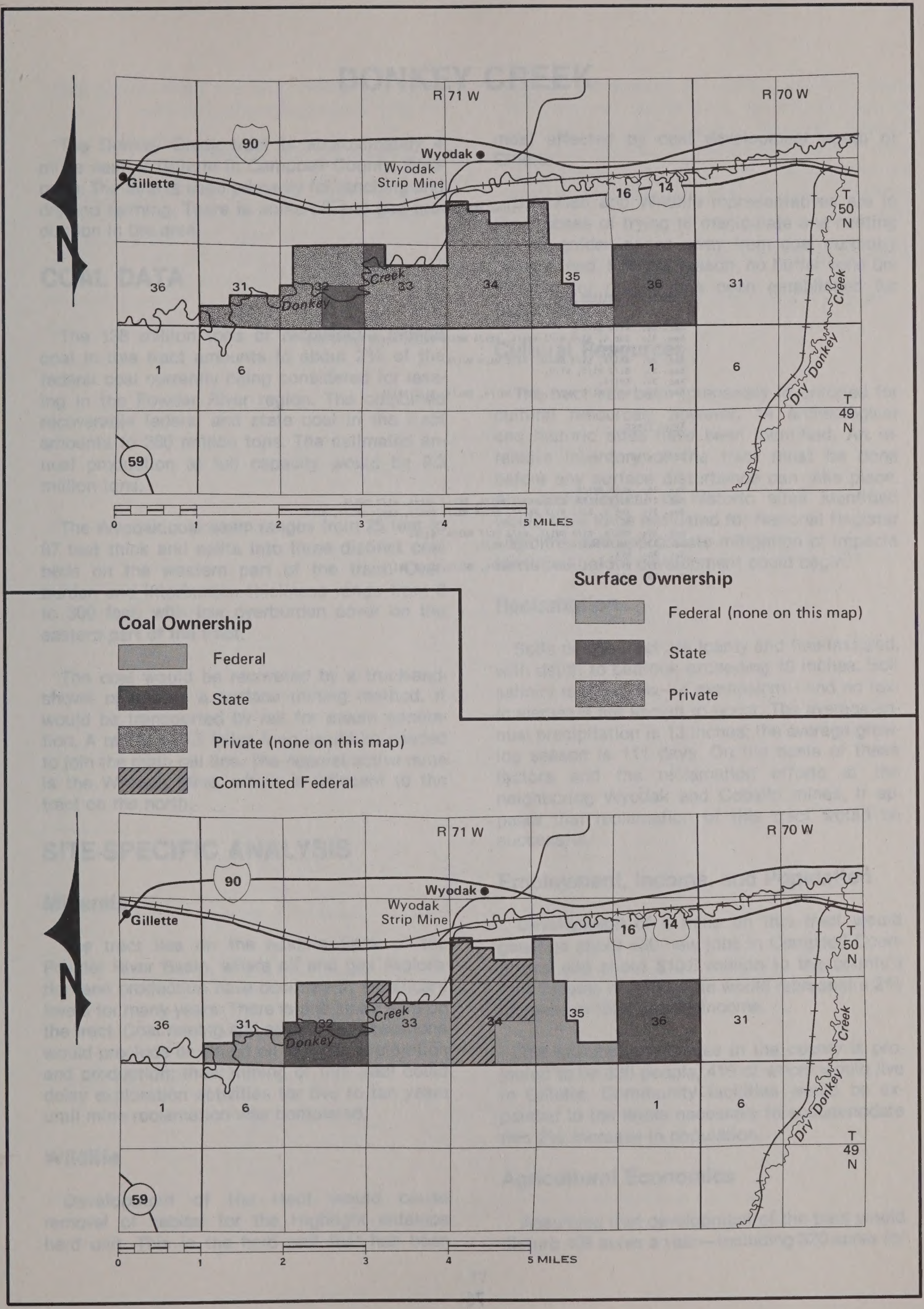
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential good; lower on sandy soils in southern part of tract	Low
Groundwater	Three domestic wells; springs, wells, and pools for livestock	Destruction of wells, springs, alluvial aquifer. Supplies could be replaced at greater cost by drilling deeper.	Low
Surface water	Water from 24 reservoirs used for livestock, some industry. Trenches and dikes for agriculture.	During mining, destruction of reservoirs and control structures. Some supply lost, infiltration decreased, but most farming is dryland. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope common, some mule deer. Bald eagles occasionally hunt on tract. Nests of great horned owl, red-tailed hawk, and ferruginous hawk on tract.	Net loss of antelope 1% to 3%; deer, less than 1%. Eagle prey species lost; red-tailed hawks might relocate; great horned owls eventually would be lost.	Low
Cultural resources	About 500 acres have been surveyed; 12 sites recorded; none evaluated. Further inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward.	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Rights-of-way exist for county road and power line. Possible alluvial valley floor.	Exception applied--road and power line would be moved. OSM determination pending on possible AVF.	Moderate
LAND USES			
Major uses	Grazing, dryland crops; three occupied dwellings	Disturbance of 180 acres per year; occupants would move if tract was mined; dwellings removed or destroyed.	Low
Oil and gas	None on tract		
Transportation	Two county roads run through tract total of about 5.5 miles.	Increase of 62 to 180 vehicles a day on Wyo. 59. Rail traffic would increase by 8 unit trains a day.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 3	Assumes that all 500 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-25	Assumes that all 500 acres to be disturbed annually would be devoted to barley.	Low
			-26	Assumes that all 500 acres to be disturbed annually would be devoted to oats.	Low
			-26	Assumes that all 500 acres to be disturbed annually would be devoted to wheat.	Low
			-26	Assumes that all 500 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	730 more jobs	26,600	730 more jobs	Low; 3% of 1990 employment
Population	Gillette	12,134	16,200	—	23,500	700 more persons	25,000	700 more persons	Low; 3% of 1990 population



Surface Ownership
▨ Federal (none on this map)
▨ State
▨ Private
Coal Ownership
▨ Federal
▨ State
▨ Private (none on this map)
▨ Committed Federal
R 71 W
R 70 W
90
Wyodak
Wyodak Strip Mine
Gillette
16
14
T 50 N
T 49 N
36
31
32
33
34
35
36
31
1
6
1
6
Donkey
Creek
Dry Donkey Creek
59
0
1
2
3
4
5 MILES

Donkey Creek

LEGAL DESCRIPTION

DONKEY CREEK

Federal Uncommitted Coal

Sec. 26: W1/2 SW1/4.
Sec. 31: lot 4, S1/2 N1/2 SE1/4, SE1/4 NE1/4 SW1/4, SE1/4 SW1/4, S1/2 SE1/4.
Sec. 32: NE1/4, E1/2 NW1/4, E1/2 W1/2 NW1/4.
Sec. 33: S1/2 N1/2, S1/2.
Sec. 34: SE1/4.
Sec. 35: W1/2 E1/2 NW1/4, W1/2 NW1/4, SW1/4, S1/2 SE1/4.

Total Tract

T50N, R71W

Sec. 26: W1/2 SW1/4.
Sec. 27: S1/2 SE1/4, S1/2 NE1/4 SW1/4, SE1/4 SW1/4, W1/2 SW1/4.
Sec. 31: lot 4, S1/2 N1/2 SE1/4, SE1/4 NE1/4 SW1/4, SE1/4 SW1/4, S1/2 SE1/4.
Sec. 32: NE1/4, E1/2 NW1/4, E1/2 W1/2 NW1/4, S1/2.
Sec. 33: NW1/4 NW1/4, S1/2 N1/2, S1/2.
Sec. 34: All.
Sec. 35: W1/2 E1/2 NW1/4, W1/2 NW1/4, SW1/4, S1/2 SE1/4.
Sec. 36: All.

DONKEY CREEK

The Donkey Creek tract is approximately 4 miles east of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 138 million tons of recoverable federal coal in this tract amounts to about 2% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and state coal in the tract amounts to 280 million tons. The estimated annual production at full capacity would be 9.3 million tons.

The Wyodak coal seam ranges from 25 feet to 87 feet thick and splits into three distinct coal beds on the western part of the tract. Overburden and interburden thickness range from 0 to 300 feet, with low overburden cover on the eastern part of the tract.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 0.3 miles long would be needed to join the main rail line. The nearest active mine is the Wyodak Mine, which is adjacent to the tract on the north.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is one small KGS on the tract. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of the tract would cause removal of habitat for the Highlight antelope herd unit. This is the herd unit that has been most affected by coal development south of Gillette.

U.S. Fish and Wildlife representatives are in the process of trying to manipulate one nesting pair of golden eages away from coal currently being mined. For this reason, no buffer zone unsuitable for mining has been established for these birds.

Cultural Resources

The tract has been intensively inventoried for cultural resources; however, 14 archeological and historic sites have been identified. An intensive inventory of the tract must be done before any surface disturbance can take place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are loamy and fine-textured, with depth to bedrock exceeding 40 inches. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 13 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at the neighboring Wyodak and Caballo mines, it appears that reclamation of this tract would be successful.

Employment, Income, and Population

Development of a mine on this tract would generate about 430 new jobs in Campbell County and add about $10.8 million to the county's total income by 1990. This would represent a 2% increase in total county income.

The population increase in the county is projected to be 830 people, 410 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 2% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 409 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would vary from $2,000 (assuming all acreage disturbed was used for cattle production) to $19,000 (assuming all acreage was used for wheat production). A maximum of 854 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a possible alluvial valley floor along Donkey Creek. The OSM and the Wyoming DEQ have been asked to evaluate that area.

Rights-of-Way and Buffers

A buffer zone unsuitable for mining extends 100 feet beyond the right-of-way for U.S. 141-6, which is north of the tract. This buffer zone extends into the NW½SW¼ of Section 27, T50N, R71W, in the northernmost portion of the tract.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
DONKEY CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	3,270	
COAL INFORMATION		
Coal quality	Subbituminous; 8,092 BTUs per pound, 0.52% sulfur	
Recoverable reserves	280 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	1.96 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,092 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 214 to 1 for the Donkey Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

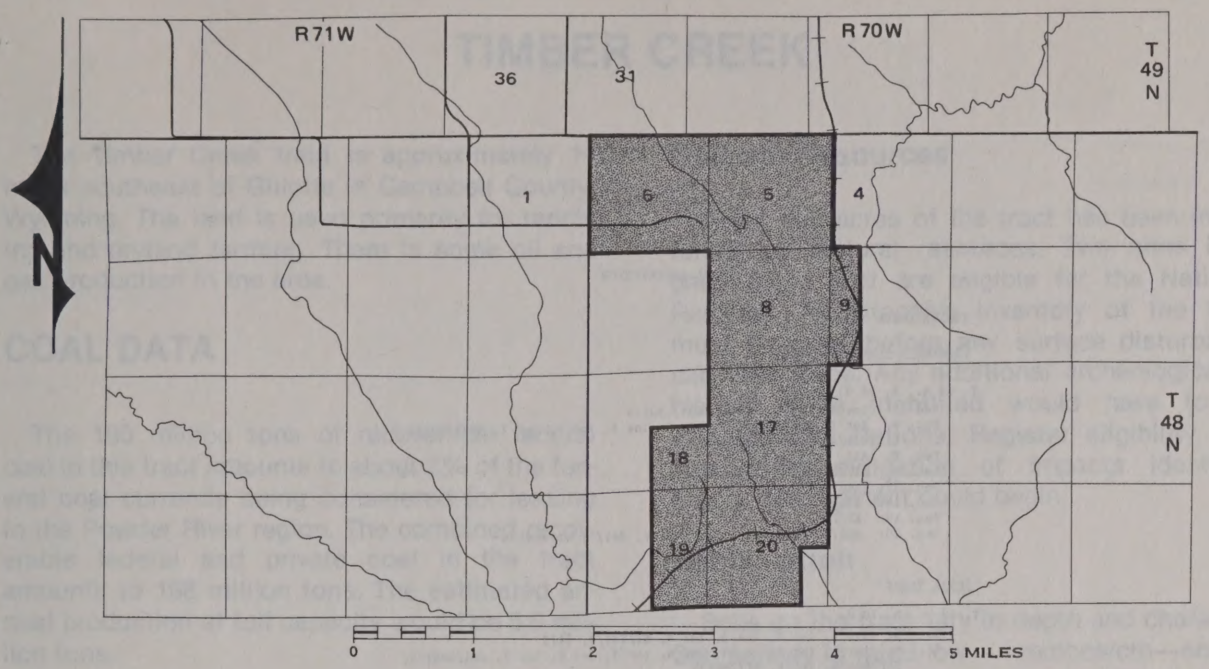
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990 and 1995, of same plus federal primary standards during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential good.	Low
Groundwater	Several domestic, livestock, and monitor wells.	Destruction of shallow wells. Little effect on aquifers underlying the Wyodak coal.	Moderate
Surface water	Several small livestock reservoirs and reservoirs used to irrigate hayfields	During mining, loss of supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope common; mule deer only in easternmost part of tract. One pair of golden eagles; USFWS is trying to coax them away from mine area.	Displacement of antelope. Smoother terrain after reclamation and losss of brush would mean less suitable winter antelope habitat, less cover for deer. Golden eagles' hunting habitat would be lost; nest site would have to be moved or birds unable to reproduce	Low for deer and antelope; moderate for eagles.
Cultural resources	Fourteen archeological and historic sites known. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Buffer for U.S. 14-16 extends into north part of tract; golden eagle nest on tract near neighboring mine; possible alluvial valley floor.	Buffer is unsuitable for mining. Attempts being made to lure eagles to nest elsewhere, so no buffer established. OSM determination pending on possible AVF.	Moderate
LAND USES			
Major uses	Grazing, some crops	Disturbance of 89 acres per year	Low
Oil and gas	Tract overlies a known geological structure	No conflicts expected	Low
Transportation	County road in tract; U.S. 14-16 just north; railroad north of highway.	No effect other than that already caused by existing Wyodak mine	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-2	Assumes that all 409 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-18	Assumes that all 315 acres of cropland on tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-18	Assumes that all 315 acres of cropland on tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-19	Assumes that all 315 acres of cropland on tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-18	Assumes that all 315 acres of cropland on tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	———	24,500	430 more jobs	26,600	430 more jobs	Low; less than 2% in 1990
Population	Gillette	12,134	16,200	———	23,500	410 more persons	25,000	410 more persons	Low; less than 2% in 1990


R71W
R70W
T
49
N
T
48
N
36
31
1
6
5
4
8
9
17
18
19
20
0
1
2
3
4
5 MILES

Coal Ownership

▨ Federal

▨ State (none on this map)

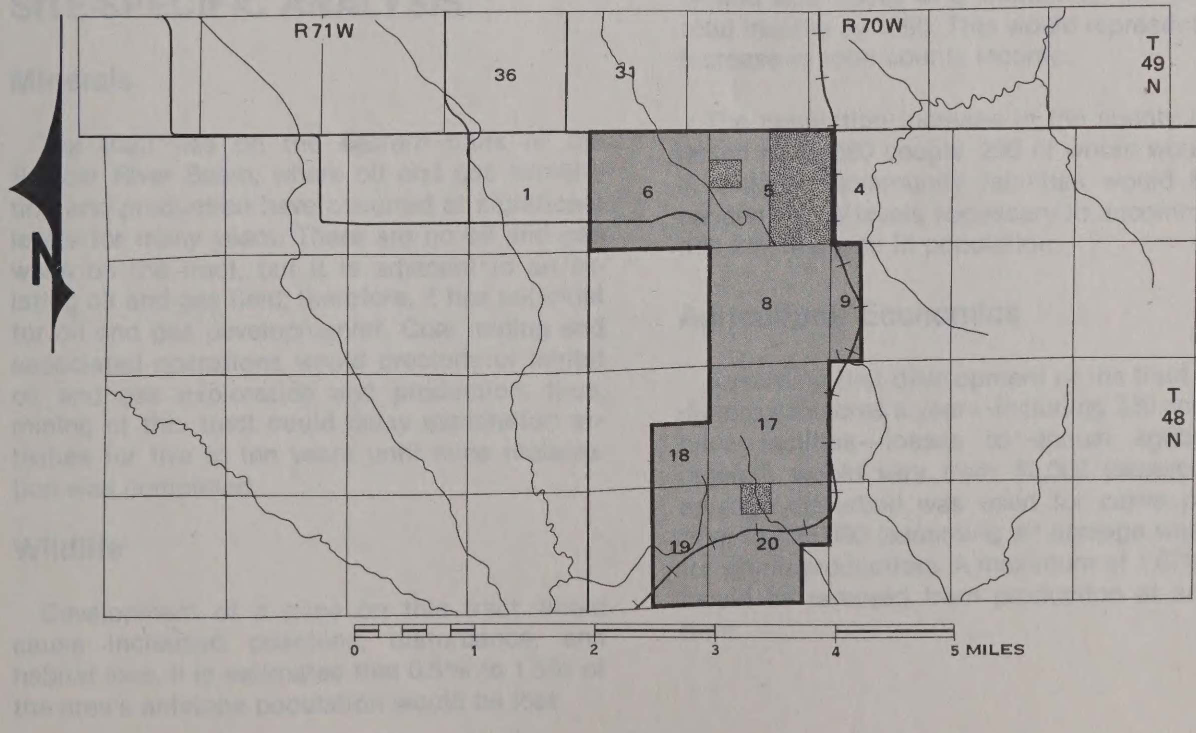
▨ Private

Surface Ownership

▨ Federal (none on this map)

▨ State (none on this map)

▨ Private


R71W
R70W
T
49
N
T
48
N
36
31
1
6
5
4
8
9
17
18
19
20
0
1
2
3
4
5 MILES

Timber Creek

LEGAL DESCRIPTION

TIMBER CREEK TRACT

Federal Uncommitted Coal

T. 48 N., R. 70 W.
Sec. 5: lot 3, lot 4, SE1/4NW1/4, SW1/4
Sec. 6: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, SE1/4NW1/4, S1/2NE1/4, SE1/4, E1/2SW1/4
Sec. 8: All
Sec. 9: W1/2W1/2
Sec. 17: All
Sec. 18: SE1/4
Sec. 19: E1/2
Sec. 20: NE1/4, NW1/4NW1/4, S1/2NW1/4, SW1/4, W1/2SE1/4

Total Tract

T. 48 N., R. 70 W.
Sec. 5: lot 1, lot 2, lot 3, lot 4, S1/2N1/2, S1/2
Sec. 6: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, SE1/4NW1/4, S1/2NE1/4, SE1/4, E1/2SW1/4
Sec. 8: All
Sec. 9: W1/2W1/2
Sec. 17: All
Sec. 18: SE1/4
Sec. 19: E1/2
Sec. 20: N1/2, SW1/4, W1/2SE1/4

TIMBER CREEK

The Timber Creek tract is approximately 10 miles southeast of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 160 million tons of recoverable federal coal in this tract amounts to about 2% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and private coal in the tract amounts to 168 million tons. The estimated annual production at full capacity would be 5.9 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal. It averages 30 feet thick; the average overburden thickness is 50 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. The main rail line passes through this tract. The Caballo Mine adjoins the tract on the west.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There are no oil and gas wells on the tract, but it is adjacent to an existing oil and gas field; therefore, it has potential for oil and gas developmenmt. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would cause increased poaching, disturbance, and habitat loss. It is estimated that 0.5% to 1.5% of the area's antelope population would be lost.

Cultural Resources

About 400 acres of the tract has been inventoried for cultural resources. Two sites have been found that are eligible for the National Register. An intensive inventory of the tract must be done before any surface disturbance can take place. Any additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract vary in depth and character. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 14.5 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. The potential is rated good.

Employment, Income, and Population

Development of a mine on this tract would generate about 300 new jobs in Campbell County and add about $7.6 million to the county's total income by 1990. This would represent a 2% increase in total county income.

The population increase in the county is projected to be 580 people, 290 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 2% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 455 acres a year—including 320 acres for mine facilites—losses to annual agricultural receipts would vary from $2,000 (assuming all acreage disturbed was used for cattle production) to $23,000 (assuming all acreage was used for wheat production). A maximum of 1,070 acres would be removed from production at any one time.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
TIMBER CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	3,750	
COAL INFORMATION		
Coal quality	Subbituminous; 7,800 BTUs per pound, 0.5% sulfur	
Recoverable reserves	176 million tons	
Recovery rate	85%	
Maintenance tract or new production	New production	
Stripping ratio	2.6 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,462 BTUs. About 38 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 225 to 1 for the Timber Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

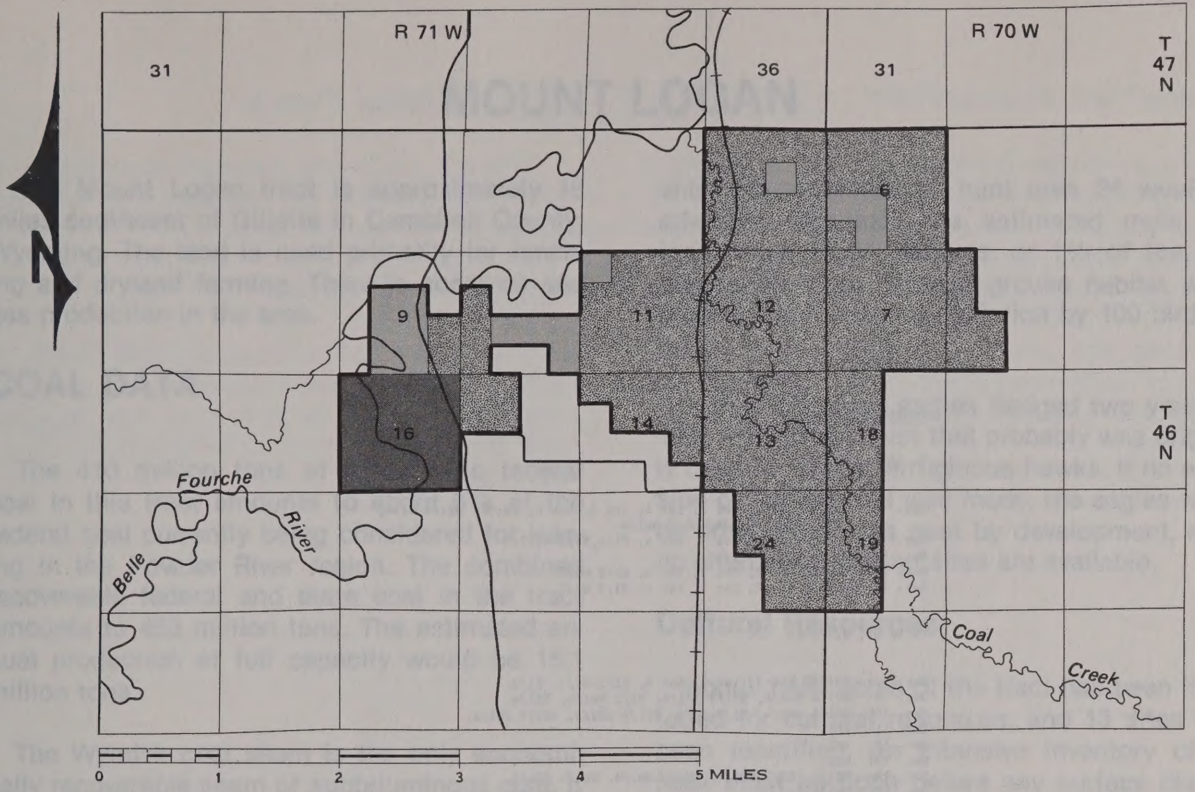
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	Some domestic and livestock wells	Wells destroyed could be replaced at greater cost by drilling deeper.	Low
Surface water	Livestock reservoirs; irrigation downstream from tract	During mining, loss of livestock and wildlife supply, decrease in supply for irrigation downstream. Some reservoirs near boundary might not be affected. Could be restored with reclamation.	Moderate
Alluvial valley floors	None		
Wildlife	Antelope in north half of tract. Bobcat has been seen; possible use of tract by bald eagles.	Net loss of 30 to 90 antelope; loss of of hunt area for raptors nesting nearby.	Low
Cultural resources	About 400 acres have been surveyed; two sites found that are eligible for National Register. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward.	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Rights-of-way exist for county road and railroad.	Exception applied--road and railroad would be moved.	Moderate
LAND USES			
Major uses	Grazing, dryland crops	Disturbance of 125 acres per year	Low
Oil and gas	None on tract		
Transportation	County road runs through tract total of about 1 mile; about 5 miles of railroad in northeast corner and south part of tract	Increase of 26 to 75 vehicles a day on Wyo. 59. Rail traffic would increase by 3 unit trains a day.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 2	Assumes that all 445 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-22	Assumes that all 445 acres to be disturbed annually would be devoted to barley.	Low
			-23	Assumes that all 445 acres to be disturbed annually would be devoted to oats.	Low
			-23	Assumes that all 445 acres to be disturbed annually would be devoted to wheat.	Low
			-22	Assumes that all 445 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	300 more jobs	26,600	300 more jobs	Low; less than 2% in 1990
Population	Gillette	12,134	16,200	—	23,500	290 more persons	25,000	290 more persons	Low; less than 2% in 1990


R 71 W
R 70 W
T 47 N
T 46 N
31
36
31
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24
19
Fourche River
Belle
Coal Creek
0
1
2
3
4
5 MILES

Coal Ownership

▨ Federal

■ State

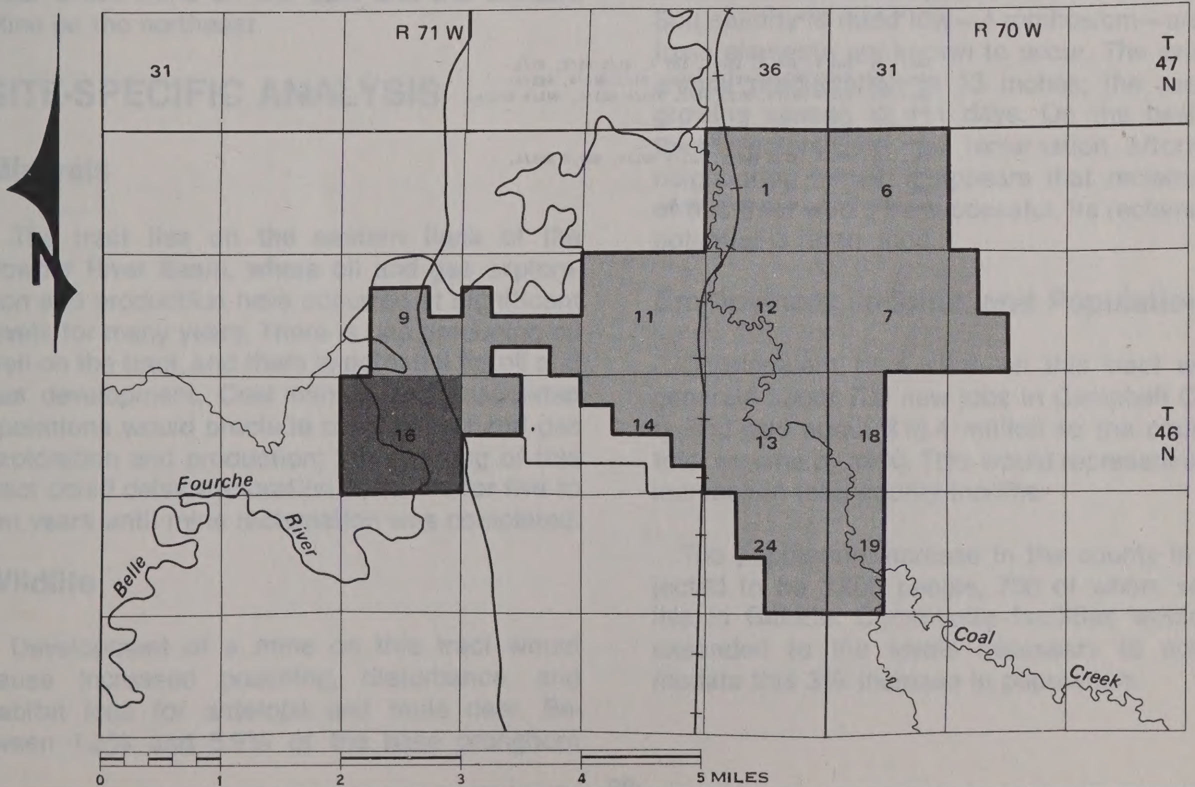
▒ Private (none on this map)

Surface Ownership

▨ Federal

■ State

▒ Private


R 71 W
R 70 W
T 47 N
T 46 N
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24
19
Fourche River
Belle
Coal Creek
0
1
2
3
4
5 MILES

Mount Logan

LEGAL DESCRIPTION

MOUNT LOGAN

Federal Uncommitted Coal

T. 46 N., R. 70 W.

Sec. 6: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, SE1/4 W1/4, S1/2 NE1/4, SE1/4, E1/2 SW1/4.
Sec. 7: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 8: W1/2 NW1/4, SW1/4.
Sec. 18: lot 1, lot 2, lot 3, lot 4, E1/2 W1/2.
Sec. 19: lot 1, lot 2, lot 3, lot 4, E1/2 W1/2.

T. 46 N., R. 71 W.

Sec. 1: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 9: SW1/4 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 10: SW1/4 NW1/4, N1/2 S1/2, SE1/4 SE1/4, SW1/4 SW1/4.
Sec. 11: All.
Sec. 12: All.
Sec. 13: All.
Sec. 14: NE1/4, E1/2 NW1/4, NW1/4 NW1/4, NE1/4 SE1/4.
Sec. 15: NW1/4.
Sec. 24: NE1/4, E1/2 NW1/4, SE1/4.

Total Tract

T. 46 N., R. 70 W.

Sec. 6: lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, SE1/4 NW1/4, S1/2 NE1/4, SE1/4, E1/2 SW1/4.
Sec. 7: lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 8: W1/2 NW1/4, SW1/4.
Sec. 18: lot 1, lot 2, lot 3, lot 4, E1/2 W1/2.
Sec. 19: lot 1, lot 2, lot 3, lot 4, E1/2 W1/2.

T. 46 N., R. 71 W.

Sec. 1: lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 9: SW1/4 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 10: SW1/4 NW1/4, N1/2 S1/2, SE1/4 SE1/4, SW1/4 SW1/4.
Sec. 11: All.
Sec. 12: All.
Sec. 13: All.
Sec. 14: NE1/4, E1/2 NW1/4, NW1/4 NW1/4, NE1/4 SE1/4.
Sec. 15: NW1/4.
Sec. 16: All.
Sec. 24: NE1/4, E1/2 NW1/4, SE1/4.

MOUNT LOGAN

The Mount Logan tract is approximately 18 miles southeast of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 410 million tons of recoverable federal coal in this tract amounts to about 6% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and state coal in the tract amounts to 452 million tons. The estimated annual production at full capacity would be 15.1 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal. It averages 44 feet thick; the average overburden thickness is 100 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. The main rail line runs through the tract. Two coal mines are adjacent to this tract, the Coal Creek Mine on the east and the Cordero Mine on the northeast.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is one producing oil well on the tract, and there is potential for oil and gas development. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would cause increased poaching, disturbance, and habitat loss for antelope and mule deer. Between 1.2% and 5.9% of the base pronghorn antelope population in hunt area 24 would be adversely affected. The estimated mule deer loss would be 50 animals, or 1% of the base population. Loss of sage grouse habitat would reduce the county''s population by 100 birds, or 5.3%.

A pair of golden eagles fledged two young in 1981 in a ground nest that probably was originally constructed by ferruginous hawks. If no exclusion of federal coal was made, the eagles would be driven from this nest by development, since no alternative nesting sites are available.

Cultural Resources

About 1,400 acres of the tract has been inventoried for cultural resources, and 13 sites have been identified. An intensive inventory of the tract must be done before any surface disturbance takes place. Any archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils in the tract have varied characteristics. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 13 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Its reclamation potential is rated good.

Employment, Income, and Population

Development of a mine on this tract would generate about 730 new jobs in Campbell County and add about $18.4 million to the county's total income by 1990. This would represent a 4% increase in total county income.

The population increase in the county is projected to be 1,400 people, 700 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 425 acres a year—including 200 acres for mine facilites—losses to annual agricultural receipts would vary from $2,000 (assuming all acreage disturbed was used for cattle production) to $15,000 (assuming all 260 acres of cropland was used for wheat production, the rest for cattle production). A maximum of 1,550 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor in the tract. The OSM and the Wyoming DEQ have been asked to evaluate that area.

Landowner Preference

One owner of surface in this tract had previously expressed a preference against mining. However, that landowner is now deceased, and the heirs have not yet informed the BLM of their position.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
MOUNT LOGAN COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	6,805	
COAL INFORMATION		
Coal quality	Subbituminous; 8,479 BTUs per pound, 0.5% sulfur	
Recoverable reserves	452 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	2.9 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,479 BTUs. About 38 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 225 to 1 for the Mount Logan tract.	

EFFECTS OF LEASING AND DEVELOPMENT

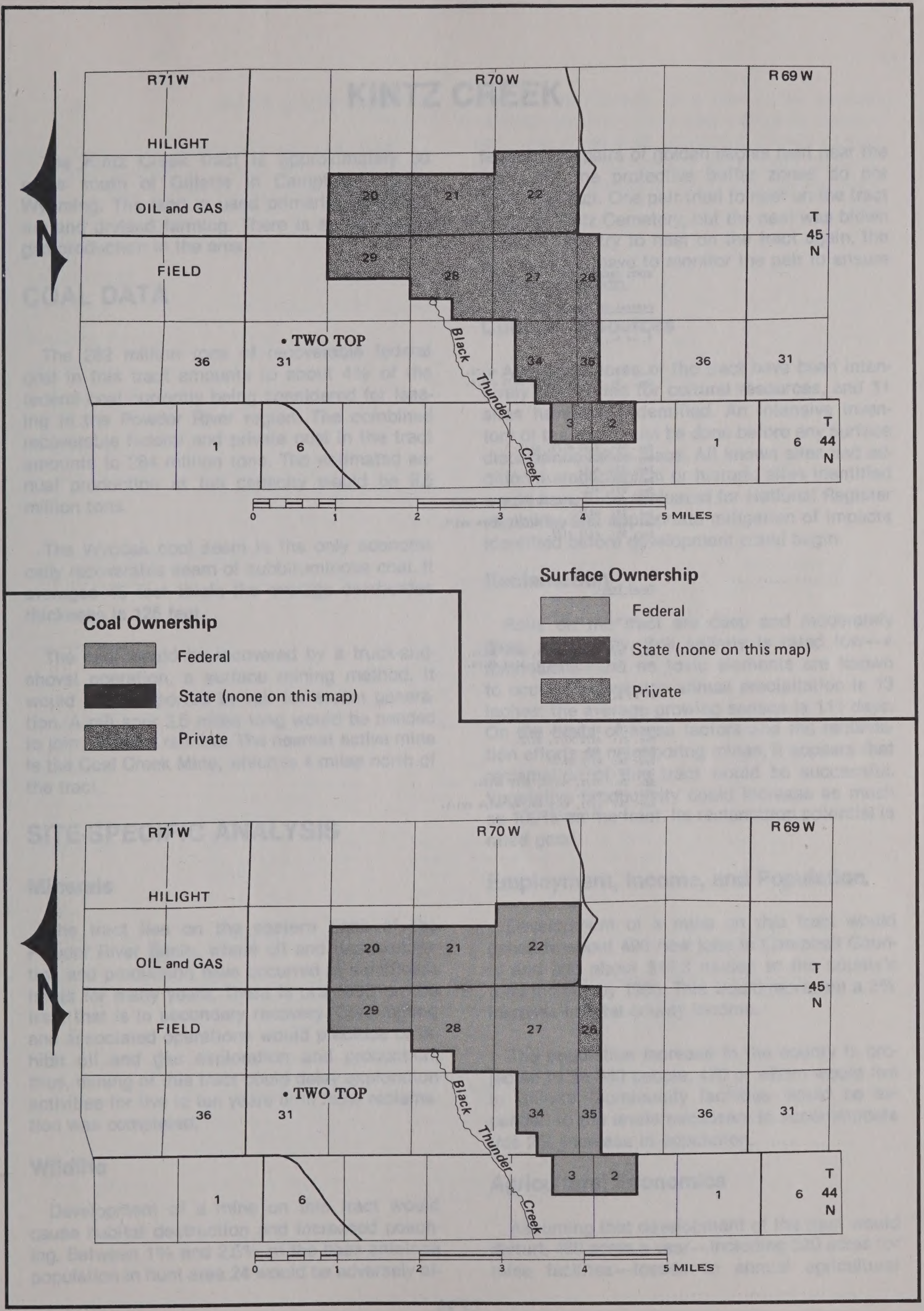
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Particulates well below state standard	Some increase in particulates, but concentrations still below state standard	Low
Reclamation potential	Reclamation good on mines in area	Potential good	Low
Groundwater	One domestic well; livestock use water from wells and pools	Wells would be decreased or destroyed, alluvial aquifer destroyed. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Livestock reservoirs; irrigation downstream from tract	During mining, loss of livestock and wildlife supply, decrease in supply for irrigation downstream. Could be restored with reclamation.	Moderate
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope and mule deer common; good reptile and amphibian habitat; sage grouse lek and winter habitat; three more leks nearby; one golden eagle ground nest along river; foxes, skunks, badgers.	Loss of antelope and deer habitat and increase in poaching and road kills; loss of all reptiles and amphibians; lek destroyed and grouse habitat lost; loss of eagle nest and hunting habitat; loss of prey species for raptors, some furbearers lost.	Moderate
Cultural resources	About 1,400 acres have been surveyed, 13 sites identified. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of all sites present. Appropriate mitigation for any sites will be determined during further inventory, and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward	Low
Wilderness/Special management areas	None		

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Unsuitability criteria	Rights-of-way exist for county road, power line, and pipeline. Eagle nest on tract; possible alluvial valley floor.	Exception applied—road, pipeline, and railroad would be moved; eagle nest displaced. OSM determination pending on possible AVF.	High
LAND USES			
Major uses	Grazing, some crops	Disturbance of 225 acres per year	Low
Oil and gas	One producing well on tract	Loss of 45 barrels of oil per day	Low
Transportation	County roads run through northeast corner and west edge of tract; railroad runs north-south through tract	Increase of 55 to 164 vehicles a day on Wyo. 59. Rail traffic would increase by 7 unit trains a day.	Moderate

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	-2	Assumes that all 425 acres to be disturbed annually would be devoted to the support of cattle. (This includes 200 acres for mine facilities.)	Low
			-14	Assumes that all 260 acres of cropland on the tract would be devoted to barley; rest of acreage disturbed devoted to cattle.	Low
			-14	Assumes that all 260 acres of cropland on the tract would be devoted to oats; rest of acreage disturbed devoted to cattle.	Low
			-15	Assumes that all 260 acres of cropland on the tract would be devoted to wheat; rest of acreage disturbed devoted to cattle.	Low
			-14	Assumes that all 260 acres of cropland on the tract would be devoted to hay; rest of acreage disturbed devoted to cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	---	24,500	730 more jobs	26,600	730 more jobs	Low; less than 3% in 1990
Population	Gillette	12,134	16,200	---	23,500	700 more persons	25,000	730 more persons	Low; less than 3% in 1990


R71W
R70W
R69W
HILIGHT
OIL and GAS
FIELD
• TWO TOP
Black Thunder Creek
T 45 N
T 44 N
20
21
22
29
28
27
26
36
31
34
35
36
31
1
6
3
2
1
6
0
1
2
3
4
5 MILES
Coal Ownership
Federal
State (none on this map)
Private
Surface Ownership
Federal
State (none on this map)
Private

Kintz Creek

LEGAL DESCRIPTION

KINTZ CREEK

Federal Uncommitted Coal

T. 44 N., R 70 W.

Sec. 2: lot 3, lot 4, S1/2 NW1/4.
Sec. 3: lot 1, lot 2, S1/2 NE1/4.

T. 45 N., R. 70 W.

Sec. 20: S1/2 N1/2, S1/2.
Sec. 21: S1/2 N1/2, S1/2.
Sec. 22: All.
Sec. 26: SW1/4 SW1/4.
Sec. 27: All.
Sec. 28: E1/2,E1/2 NW1/4, NE1/4 SW1/4.
Sec. 29: N1/2.
Sec. 34: E1/2, E1/2 NW1/4, NE1/4 SW1/4.
Sec. 35: W1/2 W1/2.

Total Tract

T. 44 N., R. 70 W.

Sec. 2: lot 3, lot 4, S1/2 NW1/4.
Sec. 3: lot-1, lot 2, S1/2 NE1/4.

T. 45 N., R. 70 W.

Sec. 20: S1/2 N1/2, S1/2.
Sec. 21: S1/2 N1/2, S1/2.
Sec. 22: All.
Sec. 26: W1/2 W1/2.
Sec. 27: All.
Sec. 28: E1/2, NW1/4, N1/2 SW1/4.
Sec. 29: N1/2.
Sec. 34: E1/2, E1/2 NW1/4, NE1/4 SW1/4.
Sec. 35: W1/2 W1/2.

KINTZ CREEK

The Kintz Creek tract is approximately 30 miles south of Gillette in Campbell County, Wyoming. The land is used primarily for ranching and dryland farming. There is some oil and gas production in the area.

COAL DATA

The 282 million tons of recoverable federal coal in this tract amounts to about 4% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and private coal in the tract amounts to 284 million tons. The estimated annual production at full capacity would be 9.5 million tons.

The Wyodak coal seam is the only economically recoverable seam of subbituminous coal. It averages 45 feet thick; the average overburden thickness is 125 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 3.5 miles long would be needed to join the main rail line. The nearest active mine is the Coal Creek Mine, which is 4 miles north of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. There is one KGS on the tract that is in secondary recovery. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of a mine on this tract would cause habitat destruction and increased poaching. Between 1% and 2.5% of the base antelope population in hunt area 24 would be adversely affected. Two pairs of golden eagles nest near the tract, but the protective buffer zones do not enter the tract. One pair tried to nest on the tract near the Kintz Cemetery, but the nest was blown down. If they try to nest on the tract again, the lessee would have to monitor the pair to ensure proper mitigation.

Cultural Resources

About 280 acres of the tract have been intensively inventoried for cultural resources, and 11 sites have been identified. An intensive inventory of the tract must be done before any surface disturbance takes place. All known sites and additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are deep and moderately deep, and loamy. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 13 inches; the average growing season is 111 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Vegetative productivity could increase as much as 100% on the tract. Its reclamation potential is rated good.

Employment, Income, and Population

Development of a mine on this tract would generate about 490 new jobs in Campbell County and add about $12.3 million to the county's total income by 1990. This would represent a 2% increase in total county income.

The population increase in the county is projected to be 940 people, 470 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 2% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 460 acres a year—including 320 acres for mine facilites—losses to annual agricultural receipts would vary from $2,000 (assuming all acreage disturbed was used for cattle production) to $24,000 (assuming all acreage was used for wheat production). A maximum of 1,160 acres would be removed from production at any one time.

Alluvial Valley Floors

There is a potential alluvial valley floor along Kintz Creek. The OSM and the Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
KINTZ CREEK COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	4,200	
COAL INFORMATION		
Coal quality	Subbituminous; 8,388 BTUs per pound, 0.6% sulfur	
Recoverable reserves	284 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	3.9 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,388 BTUs. About 38 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 220 to 1 for the Kintz Creek tract.	

EFFECTS OF LEASING AND DEVELOPMENT

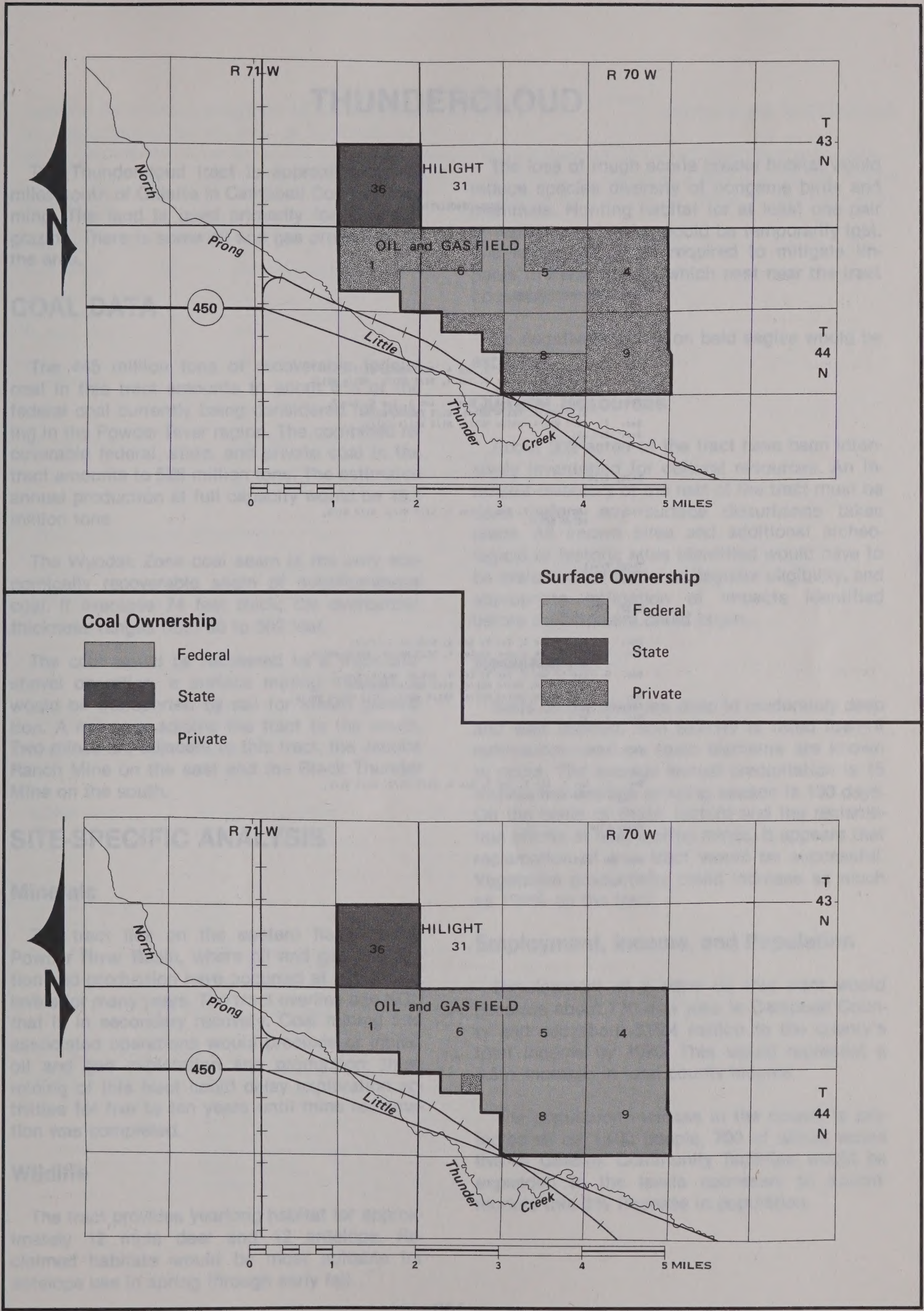
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of Wyo. 24-hour standards and of federal secondary and primary standard in 1990 and 1995 and during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	Numerous wells used for groundwater monitoring, livestock, domestic and other uses.	Destruction of wells. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Water from 18 reservoirs used by livestock and wildlife	During mining, destruction of all reservoirs, loss of livestock and wildlife supply. Most reservoirs have small capacity. Could be restored with reclamation.	Low
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Antelope abundant. Golden eagles nest near tract. One pair tried to build a nest on the tract.	Loss of 40 to 150 antelope. Loss of prey base for eagles. If eagles try to nest on tract again, operator would have to monitor them to ensure proper mitigation.	Moderate for antelope; low for eagles
Cultural resources	About 280 acres have been surveyed; 11 sites known. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Area rated Class IV	Class would change to V during mining, but Class IV restored afterward.	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	Buffer zone around Kintz cemetery in tract. Possible alluvial valley floor.	Mining would not take place in buffer zone. OSM determination pending on possible AVF.	High
LAND USES			
Major uses	Grazing, some crops, one occupied dwelling	Disturbance of 140 acres per year; occupants would move if tract was mined, dwelling would be destroyed	Low
Oil and gas	Tract overlies Highlight known geologic structure.	Oil and gas exploration activities would be delayed until mine reclamation was completed.	Low
Transportation	County road runs 3 miles through north part of tract; Wyo. 59 is 8 miles west. Main rail line is 3 miles west of tract.	Increase of 400 vehicles a day on Wyo. 59. Rail traffic would increase by 5 unit trains per day.	
Other	Cemetery occupies about 1 acre	Mine facilities would be placed next to 100-foot buffer; cemetery would not be disturbed.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 2	Assumes that all 460 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low
			-23	Assumes that all 460 acres to be disturbed annually would be devoted to barley.	Low
			-24	Assumes that all 460 acres to be disturbed annually would be devoted to oats.	Low
			-24	Assumes that all 460 acres to be disturbed annually would be devoted to wheat.	Low
			-23	Assumes that all 460 acres to be disturbed annually would be devoted to hay.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	490 more jobs	26,600	490 more jobs	Low; 2% of 1990 employment
Population	Gillette	12,134	16,200	—	23,500	470 more persons	25,000	470 more persons	Low; 2% of 1990 population


R 71 W
R 70 W
T 43 N
T 44 N
HILIGHT
36
31
OIL and GAS FIELD
1
6
5
4
8
9
450
North Prong
Little Thunder Creek
0
1
2
3
4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private
R 71 W
R 70 W
T 43 N
T 44 N
HILIGHT
36
31
OIL and GAS FIELD
1
6
5
4
8
9
450
North Prong
Little Thunder Creek
0
1
2
3
4
5 MILES

Thundercloud

LEGAL DESCRIPTION

THUNDERCLOUD TRACT

Federal Uncommitted Coal

T43N, R70W

Sec. 4: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5: Lot 1, lot 2, lot 3, lot 4, S1/2 NE1/4, SE1/4 NW1/4, SW1/4 NW1/4, S1/2.
Sec. 6: Lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 7: E1/2 NE1/4, NE1/4 NW1/4, N1/2 NE1/4 SE1/4.
Sec. 8: All.
Sec. 9: All.

T43N, R71W

Sec. 1: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, N1/2 S1/2, SE1/4 SE1/4.

Total Tract

T43N, R70W

Sec. 4: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5: Lot 1, lot 2, lot 3, lot 4, S1/2 NE1/4, SE1/4 NW1/4, SW1/4 NW1/4, S1/2.
Sec. 6: Lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 7: E1/2 NE1/4, NW1/4 NE1/4, NE1/4 NW1/4, N1/2 NE1/4 SE1/4.
Sec. 8: All.
Sec. 9: All.

T43N, R71W

Sec. 1: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, N1/2 S1/2, SE1/4 SE1/4.

T44N, R71W

Sec. 36: All.

THUNDERCLOUD

The Thundercloud tract is approximately 40 miles south of Gillette in Campbell County, Wyoming. The land is used primarily for livestock grazing. There is some oil and gas production in the area.

COAL DATA

The 445 million tons of recoverable federal coal in this tract amounts to about 6% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal, state, and private coal in the tract amounts to 528 million tons. The estimated annual production at full capacity would be 15.1 million tons.

The Wyodak Zone coal seam is the only economically recoverable seam of subbituminous coal. It averages 74 feet thick; the overburden thickness ranges from 90 to 300 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. A rail spur adjoins the tract to the south. Two mines are adjacent to this tract, the Jacobs Ranch Mine on the east and the Black Thunder Mine on the south.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. The tract overlies one KGS that is in secondary recovery. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

The tract provides yearlong habitat for approximately 12 mule deer and 12 antelope. Reclaimed habitats would be most suitable for antelope use in spring through early fall.

The loss of rough scoria breaks habitat would reduce species diversity of nongame birds and mammals. Hunting habitat for at least one pair of ferruginous hawks would be temporarily lost. The lessee would be required to mitigate impacts to these hawks, which nest near the tract boundary.

No negative impacts on bald eagles would be expected.

Cultural Resources

About 300 acres of the tract have been intensively inventoried for cultural resources. An intensive inventory of the rest of the tract must be done before any surface disturbance takes place. All known sites and additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are deep to moderately deep and well drained. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15 inches; the average growing season is 130 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Vegetative productivity could increase as much as 100% on the tract.

Employment, Income, and Population

Development of a mine on this tract would generate about 730 new jobs in Campbell County and add about $18.4 million to the county's total income by 1990. This would represent a 3.5% increase in total county income.

The population increase in the county is projected to be 1,400 people, 700 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 449 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would be negligible because all acreage to be disturbed is used for cattle production. A maximum of 1,100 acres would be removed from production at any one time.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS THUNDERCLOUD COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	4,525	
COAL INFORMATION		
Coal quality	Subbituminous; 8,881 BTUs per pound, 0.39% sulfur	
Recoverable reserves	528 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	2.63 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,881 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 236 to 1 for the Thundercloud tract.	

EFFECTS OF LEASING AND DEVELOPMENT

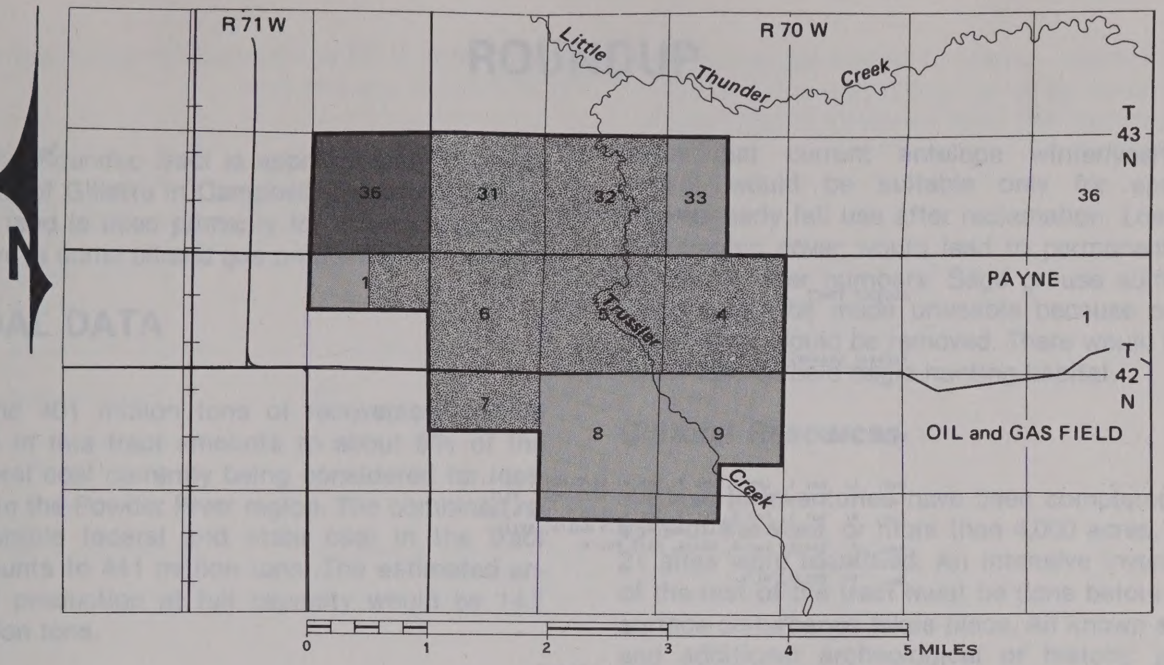
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990 and 1995, of same plus federal primary standard during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	Livestock watered from five wells; yields are variable.	Destruction of wells. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Two ephemeral streams drain most of tract; two livestock reservoirs.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Low
Alluvial valley floors	None		
Wildlife	Antelope common, some mule deer. At least one pair of ferruginous hawks hunts on tract; varied nongame birds and mammals.	Smoother habitat after reclamation and loss of brush would make reclaimed area most suitable for antelope use in spring through early fall; less diverse nongame birds and mammals. Ferruginous hawks' hunting habitat lost at least temporarily; mitigation required.	Low
Cultural resources	About 300 acres have been intensively inventoried. Inventory of rest of tract and evaluation of any sites for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
Visual resources	Landscape character subtype 6; variety class C; visual quality objectives are modification and maximum modification.	Short-term modification of visual quality objectives for life of mine. Restored to original after reclamation.	Low
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	One pair of ferruginous hawks that nests near tract hunts on tract.	Temporary loss of hunting habitat for ferruginous hawks; mitigation required.	Low
LAND USES			
Major uses	Livestock grazing; wildlife habitat, several pipelines, one electric transmission line.	Disturbance of 129 acres per year; pipelines and electrical line would be moved.	Low
Oil and gas	Tract overlies part of Highlight known geologic structure.	Oil and gas exploration activities would be delayed until mine reclamation was completed.	Low
Transportation	Wyo. 450 and Burlington Northern RR are just south of tract; developed forest road 971 bisects tract southwest - northeast.	Existing transportation facilities will be sufficient.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 2	Assumes that all 449 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	730 more jobs	26,600	730 more jobs	Low; less than 3% of 1990 employment
Population	Gillette	12,134	16,200	—	23,500	700 more persons	25,000	700 more persons	Low; less than 3% of 1990 population


R 71 W
R 70 W
Little Thunder Creek
Trussler Creek
T 43 N
T 42 N
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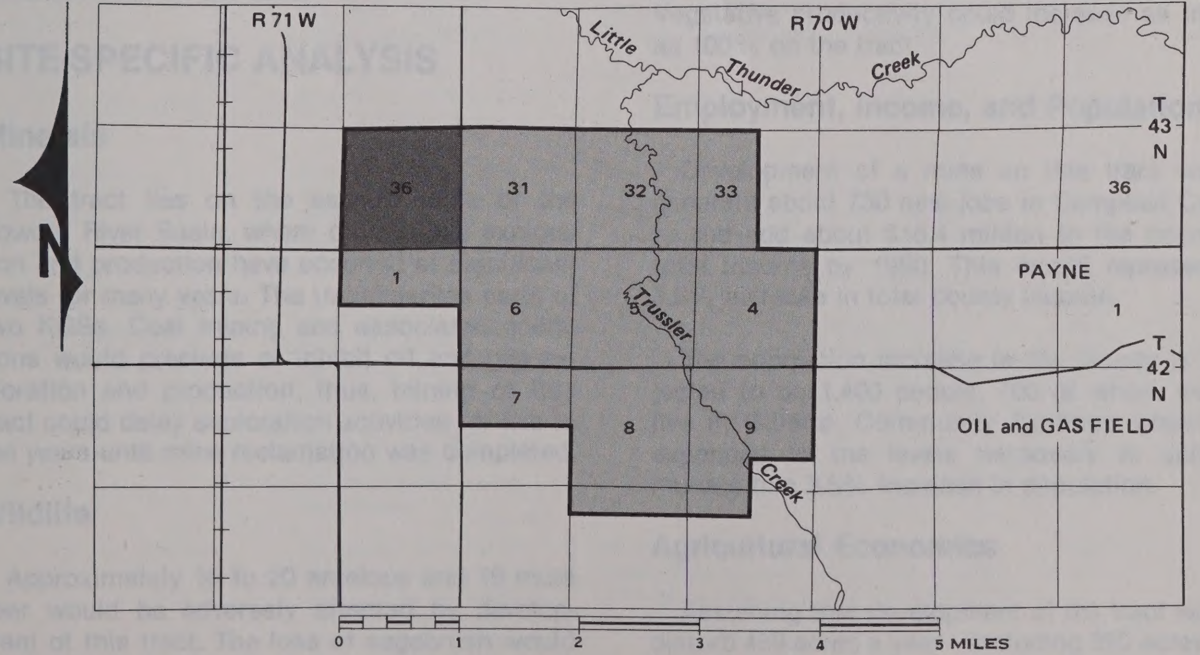
8
9
1
PAYNE
OIL and GAS FIELD
0
1
2
3
4
5 MILES

Surface Ownership

▨	Federal
■	State
▨	Private

Coal Ownership

▨	Federal
■	State
▨	Private (none on this map)


R 71 W
R 70 W
Little Thunder Creek
Trussler Creek
T 43 N
T 42 N
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1
6
5
4
1
7
8
9
PAYNE
OIL and GAS FIELD
0
1
2
3
4
5 MILES

Roundup

LEGAL DESCRIPTION

ROUNDUP TRACT

Federal Uncommitted Coal and Total Tract

T42N, R70W

Sec. 4: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 5: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2, S1/2.
Sec. 6: Lot 1, lot 2, lot 3, lot 4, lot 5, lot 6, lot 7, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4.
Sec. 7: Lot 1, lot 2, NE1/4, E1/2 NW1/4.
Sec. 8: All.
Sec. 9: NE1/4, W1/2.

T42N, R71W

Sec. 1: Lot 1, lot 2, lot 3, lot 4, S1/2 N1/2.

T43N, R70W

Sec. 31: Lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 32: All.
Sec. 33: W1/2.

ROUNDUP

The Roundup tract is approximately 45 miles south of Gillette in Campbell County, Wyoming. The land is used primarily for livestock grazing. There is some oil and gas production in the area.

COAL DATA

The 401 million tons of recoverable federal coal in this tract amounts to about 6% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and state coal in the tract amounts to 441 million tons. The estimated annual production at full capacity would be 14.7 million tons.

The economically recoverable seams of subbituminous coal in this tract are the Upper Bed of the Wyodak Zone and the Wyodak Zone. The Upper Bed averages 7 feet thick; the Wyodak Zone averages 63 feet thick. Overburden thickness ranges from 100 to 280 feet; interburden thickness ranges from 60 to 200 feet.

The coal would be recovered by a truck-and-shovel or dragline operation, a surface mining method. It would be transported by rail for steam generation. A rail spur 1 mile long would be needed to join the main rail line. The nearest active mine is the Black Thunder Mine, which adjoins the tract on the east.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. The tract overlies parts of two KGSs. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Approximately 16 to 20 antelope and 16 mule deer would be adversely affected by development of this tract. The loss of sagebrush would mean that current antelope winter/yearlong habitat would be suitable only for spring-summer-early fall use after reclamation. Loss of topographic cover would lead to permanent reduction in deer numbers. Sage grouse summer range would be made unusable because sagebrush cover would be removed. There would be a minor loss of bald eagle hunting habitat.

Cultural Resources

Class III inventories have been completed on 65% of the tract, or more than 4,000 acres, and 21 sites were identified. An intensive inventory of the rest of the tract must be done before any surface disturbance takes place. All known sites and additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are deep to moderately deep and well drained. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15 inches; the average growing season is 130 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Vegetative productivity could increase as much as 100% on the tract.

Employment, Income, and Population

Development of a mine on this tract would generate about 730 new jobs in Campbell County and add about $18.4 million to the county's total income by 1990. This would represent a 3.5% increase in total county income.

The population increase in the county is projected to be 1,400 people, 700 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3.5% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 459 acres a year—including 320 acres for mine facilities—losses to annual agricultural receipts would be about $2,000 (assuming all acreage disturbed was used for cattle production). A maximum of 1,154 acres would be removed from production at any one time.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
ROUNDUP COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	5,890	
COAL INFORMATION		
Coal quality	Subbituminous; 8,551 BTUs per pound, 0.31% sulfur	
Recoverable reserves	441 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	3.52 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,551 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 227 to 1 for the Roundup tract.	

EFFECTS OF LEASING AND DEVELOPMENT

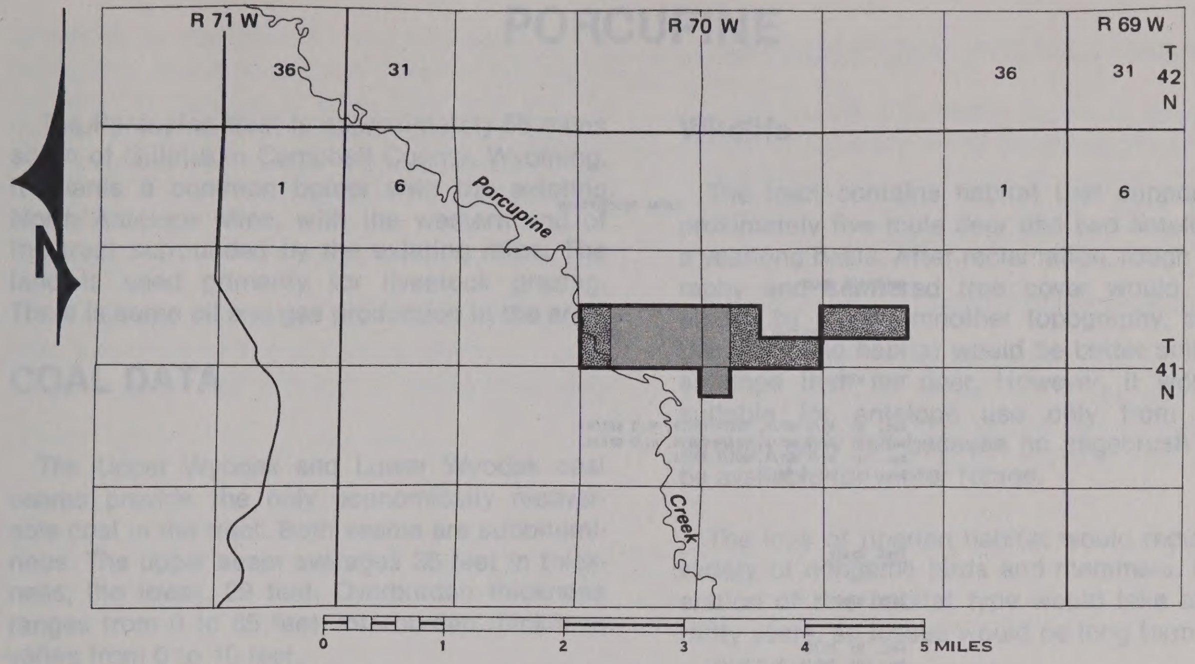
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of Wyo. 24-hour standard and federal secondary and primary 24-hour standards in 1990; same during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	Five wells used for livestock; yields are variable.	Destruction of wells. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Two ephemeral streams drain tract; one existing reservoir; others planned for 1983. Three water rights exist on tract.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Low
Alluvial valley floors	None		
Wildlife	Antelope common, some mule deer and sage grouse. Bald eagles roost a few miles from tract, may hunt on tract.	Loss of 16 to 20 antelope, 16 mule deer. Loss of brush would make habitat less suitable for antelope winter use after reclamation, unusable for sage grouse. Deer numbers permanently reduced; minor loss of bald eagle hunting habitat.	Moderate
Cultural resources	More than 4,000 acres have been intensively inventoried; 21 sites known. Inventory of rest of tract and evaluation of any sites for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Landscape character is subtype 6; variety class is C for 60% of tract, B for 10%, A for 30%. Visual quality objectives range from partial rentention to maximum modification.	Variety class in 30% of tract would be permanently reduced from A to C. Visual quality in part now rated C would revert to original after reclamation.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	None apply		
LAND USES			
Major uses	Grazing and wildlife habitat. Two pipelines and a telephone line cross tract.	Disturbance of 139 acres per year. Pipelines and phone line could be moved.	Low
Oil and gas	Tract overlies parts of two known geologic structures.	Oil and gas exploration activities would be delayed until mine reclamation was completed.	Low
Transportation	County road 38 runs east-west through south part of tract; Wyo. 59 is 7 miles west. Burlington Northern RR is 1 mile west.	Road and railroad for North Rochelle may serve Roundup tract; otherwise short access road and rail spur would be built.	Low
Other	Facilities for North Rochelle Mine are within tract boundaries.	North Rochelle Mine facilities on tract could create conflict necessitating negotiations between North Rochelle owners and Roundup lessee.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 2	Assumes that all 459 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	730 more jobs	26,600	730 more jobs	Low; less than 3% of 1990 employment
Population	Gillette	12,134	16,200	—	23,500	700 more persons	25,000	700 more persons	Low; less than 3% of 1990 population

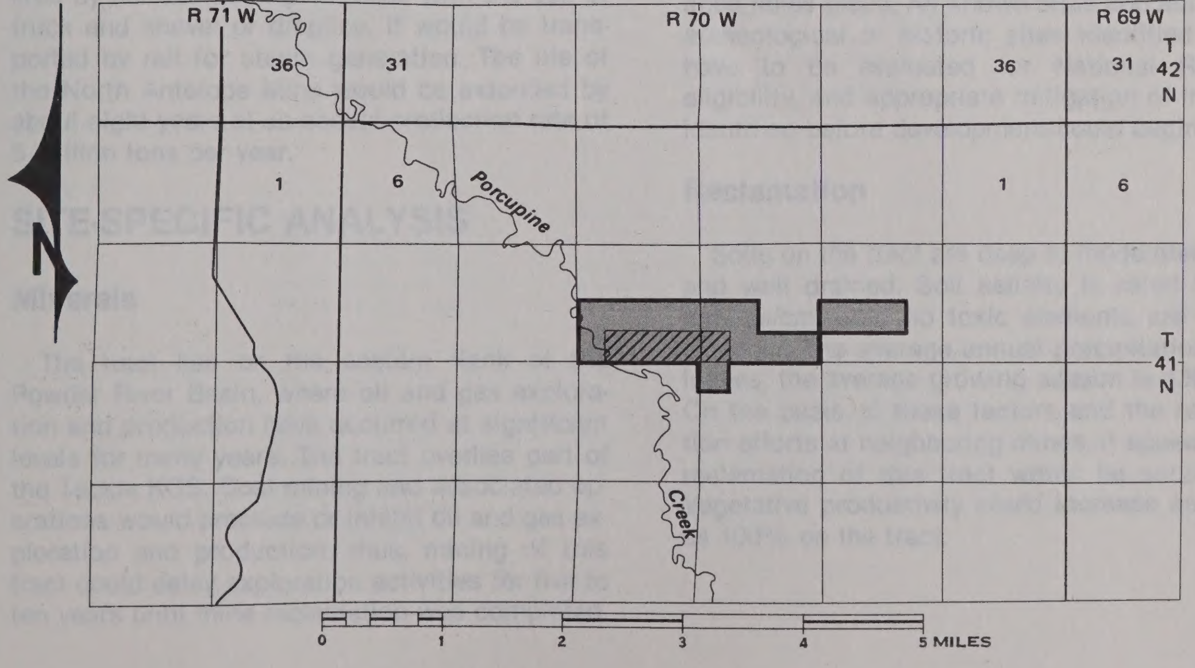

R 71 W
R 70 W
R 69 W
36
31
36
31
T 42 N
1
6
1
6
Porcupine
Creek
T 41 N
0
1
2
3
4
5 MILES

Surface Ownership

- ▒ Federal
- ▓ State (none on this map)
- ░ Private

Coal Ownership

- ▒ Federal
- ▓ State (none on this map)
- ░ Private (none on this map)
- ▨ Committed Federal


R 71 W
R 70 W
R 69 W
36
31
36
31
T 42 N
1
6
1
6
Porcupine
Creek
T 41 N
0
1
2
3
4
5 MILES

Porcupine

LEGAL DESCRIPTION

PORCUPINE TRACT

Federal Uncommitted Coal

T41N, R70W

Sec. 9: N1/2 SW1/4, SW1/4 SW1/4, N1/2 SE1/4.
Sec. 10: N1/2 SW1/4, SE1/4 SW1/4, S1/2 SE1/4.
Sec. 11: N1/2 SW1/4, NW1/4 SE1/4.
Sec. 15: NW1/4 NW1/4.

Total Tract

T41N, R70W

Sec. 9: S1/2.
Sec. 10: SW1/4, S1/2 SE1/4.
Sec. 11: N1/2 SW1/4, NW1/4 SE1/4.
Sec. 15: NW1/4 NW1/4.

PORCUPINE

The Porcupine tract is approximately 55 miles south of Gillette in Campbell County, Wyoming. It shares a common border with the existing North Antelope Mine, with the western end of the tract surrounded by the existing mine. The land is used primarily for livestock grazing. There is some oil and gas production in the area.

COAL DATA

The Upper Wyodak and Lower Wyodak coal seams provide the only economically recoverable coal in the tract. Both seams are subbituminous. The upper seam averages 36 feet in thickness; the lower, 29 feet. Overburden thickness ranges from 0 to 65 feet; interburden thickness varies from 0 to 10 feet.

There are 39 million tons of recoverable coal in the two seams: 26 million tons of uncommitted federal coal and 13 million tons of already committed federal coal. The 26 million tons of uncommitted coal amounts to less than 1% of the federal coal currently being considered for leasing in the Powder River region.

It is assumed that the Porcupine tract would be mine in conjunction with the neighboring North Antelope Mine and use the existing rail spur and processing facilities. The coal would be recovered by surface mining methods with the use of truck and shovel or dragline. It would be transported by rail for steam generation. The life of the North Antelope Mine would be extended by about eight years at an annual production rate of 5 million tons per year.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. The tract overlies part of the Teckla KGS. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

The tract contains habitat that supports approximately five mule deer and two antelope on a yearlong basis. After reclamation, rough topography and scattered tree cover would be replaced by much smoother topography, so that the reclaimed habitat would be better suited for antelope than for deer. However, it would be suitable for antelope use only from spring through early fall because no sagebrush would be available for winter forage.

The loss of riparian habitat would reduce the variety of nongame birds and mammals. Regeneration of this habitat type would take at least thirty years, so losses would be long term.

Foraging habitat for two pairs of golden eagles nesting near the tract would be removed, but the significance of the loss cannot be determined. A minor loss of bald eagle foraging habitat would occur.

Cultural Resources

The entire tract has been intensively inventoried for cultural resources, and 34 sites have been identified, 9 of which are eligible for the National Register. An intensive inventory of the tract must be done before any surface disturbance takes place. All known sites and additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are deep to moderately deep and well drained. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15 inches; the average growing season is 130 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Vegetative productivity could increase as much as 100% on the tract.

Employment, Income, and Population

Because this tract would only extend the life of the North Antelope Mine, there would be no additional annual production, and development of this tract would not result in additional employment, income, or population.

Agricultural Economics

Because it is estimated that this tract would extend the life of the North Antelope Mine by eight years it can be assumed that development of this 393 acres of coal would disturb only about 50 acres a year. A maximum of 300 acres would be removed from agricultural production at any one time with a six-year reclamation period. Losses to Campbell County's annual agricultural receipts would be insignificant (about $1,600 for 300 acres).

Alluvial Valley Floors

There is a potential valley floor along Porcupine Creek. The OSM and the Wyoming DEQ have been asked to evaluate that area.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
PORCUPINE COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	720	
COAL INFORMATION		
Coal quality	Subbituminous; 8,429 BTUs per pound, 0.28% sulfur	
Recoverable reserves	39 million tons	
Recovery rate	90%	
Maintenance tract or new production	Maintenance	
Stripping ratio	1.09 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,429 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 224 to 1 for the Porcupine tract.	

EFFECTS OF LEASING AND DEVELOPMENT

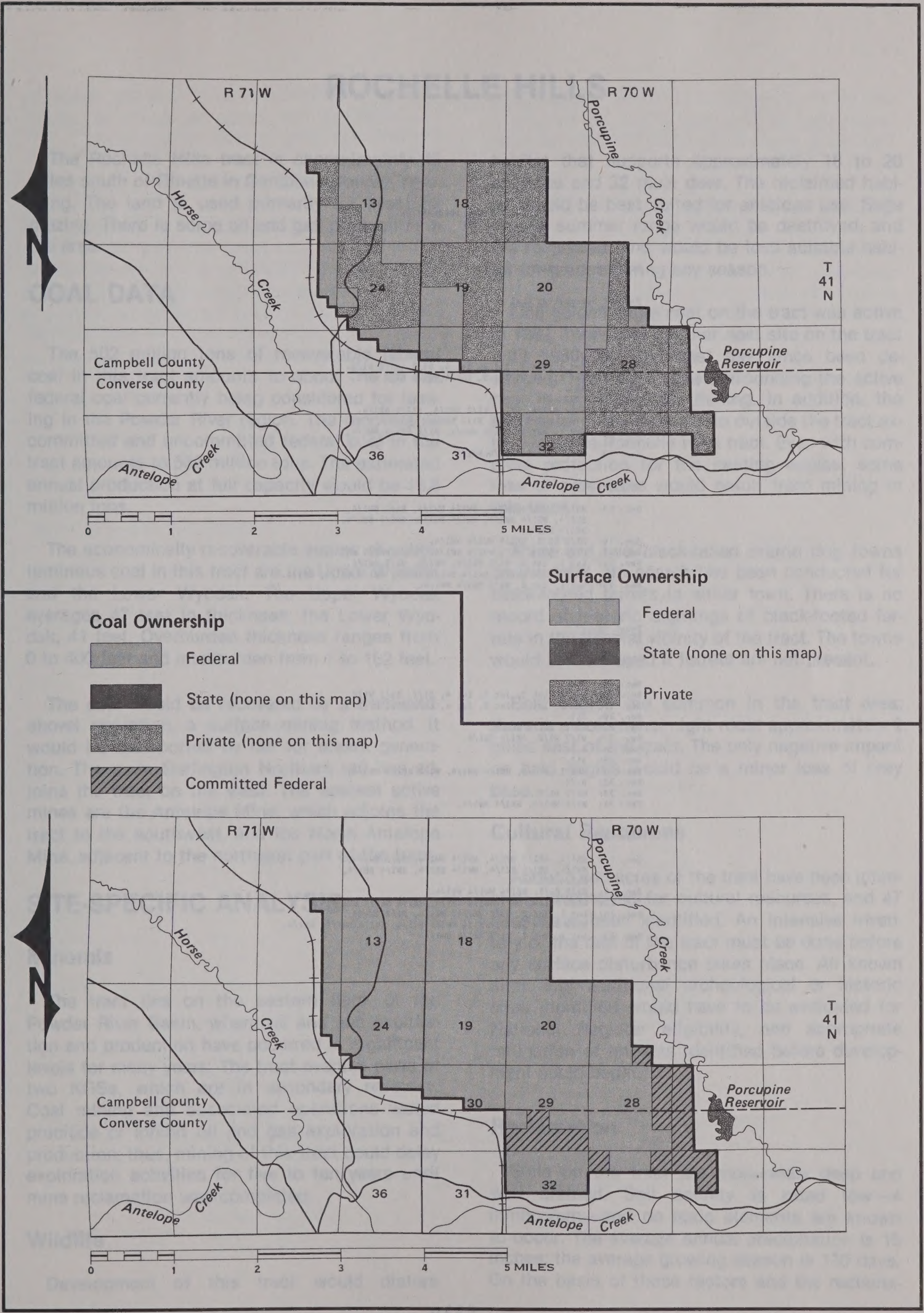
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990 and 1995.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	1 "miscellaneous" well	Destruction of wells. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Several small streams; Porcupine Creek at west side of tract; one small reservoir.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Low
Alluvial valley floors	Possible AVF present	Further study required	Moderate
Wildlife	Some mule deer and antelope present. Riparian habitat along Porcupine Creek supports various nongame birds and mammals. Bald and golden eagles hunt on tract.	Loss of brush and smoothing of topography would make reclaimed habitat poorer for deer and for wintering antelope. Loss riparian area would reduce nongame bird and mammal variety for thirty years. Some eagle hunting area would be lost.	Moderate
Cultural resources	All tract has been inventoried; 34 sites known; 9 are eligible for National Register. Evaluation of any other sites for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Visual resources	Landscape character subtype 6; variety class A on 40% of tract, C on rest. Visual quality objective is partial retention for the rugged red hills east and west of Porcupine Creek; modification or maximum modification for rest of tract.	Variety class in red hills area would be permanently reduced from A to C. Visual quality in rest of tract would revert to original after reclamation.	High
Wilderness/Special management areas	None		
Unsuitability criteria	Buffers for two golden eagle nests off tract extend into tract. Possible alluvial valley floor	Eagle buffers are unsuitable for mining. OSM determination pending on possible AVF.	Moderate
LAND USES			
Major uses	Grazing and wildlife habitat.	Disturbance of 50 acres per year.	Low
Oil and gas	Tract overlies part of the Teckla known geologic structure.	Oil and gas exploration activities would be delayed until mine reclamation was completed.	Low
Transportation	Facilities associated with adjacent North Antelope mine would serve this tract. North Antelope access road joins county road west of tract; spur for North Antelope will join Burlington Northern RR.	No construction needed because North Antelope road and rail line will serve Porcupine tract. Any existing roads will be moved.	Low

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	—	Assumes that the 50 acres to be disturbed annually would be devoted to the support of cattle.	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	—	26,600	—	No significance
Population	Gillette	12,134	16,200	—	23,500	—	25,000	—	No significance


R 71 W
R 70 W
Porcupine
Horse
Creek
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41
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13
18
24
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29
28
30
32
36
31
Porcupine
Reservoir
Campbell County
Converse County
Antelope
Creek
Antelope
Creek
0
1
2
3
4
5 MILES
Surface Ownership
Federal
State (none on this map)
Private
Coal Ownership
Federal
State (none on this map)
Private (none on this map)
Committed Federal

Rochelle Hills

LEGAL DESCRIPTION

ROCHELLE HILLS TRACT

Federal Uncommitted Coal

T41N, R70W

Sec. 17: W1/2.
Sec. 18: Lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 19: Lot 1, lot 2, lot 3, lot 4, E1/2 E1/2 W1/2.
Sec. 20: All.
Sec. 21: W1/2.
Sec. 28: W1/2 NE1/4, W1/2, W1/2 SE1/4, SE1/4 SE1/4.
Sec. 29: N1/2, NW1/4 SW1/4, N1/2 SE1/4.
Sec. 30: Lot 1, NE1/4, NE1/4 NW1/4, N1/2 SE1/4 NW1/4,
Sec. 32: N1/2.
Sec. 33: NW1/4 NE1/4, NE1/4 NW1/4.

T41N, R71W

Sec. 13: NE1/4, NE1/4 NW1/4, NW1/4 NW1/4, S1/2 NW1/4,
SW1/4, NE1/4 SE1/4, NW1/4 SE1/4, SW1/4 SE1/4,
SE1/4 SE1/4.
Sec. 14: E1/2 E1/2, NE1/4 NW1/4 NE1/4.
Sec. 23: E1/2 NE1/4, N1/2 NE1/4 SE1/4, SE1/4 NE1/4 SE1/4.
Sec. 24: Lot 1, lot 2, S1/2 NE1/4, NW1/4, N1/2 SW1/4,
N1/2 SW1/4 SW1/4, SE1/4 SW1/4 SW1/4, SE1/4 SW1/4, SE1/4.
Sec. 25: Lot 1, lot 2, N1/2 NE1/4 NW1/4.

Total Tract

T41N, R70W

Sec. 17: W1/2.
Sec. 18: Lot 1, lot 2, lot 3, lot 4, E1/2, E1/2 W1/2.
Sec. 19: Lot 1, lot 2, lot 3, lot 4, E1/2 E1/2 W1/2.
Sec. 20: All.
Sec. 21: W1/2, SW1/4 SE1/4.
Sec. 27: W1/2 W1/2, SE1/4 SW1/4.
Sec. 28: All.
Sec. 29: All.
Sec. 30: Lot 1, NE1/4, NE1/4 NW1/4, N1/2 SE1/4 NW1/4,
Sec. 32: N1/2.
Sec. 33: N1/2 N1/2.
Sec. 34: N1/2 NW1/4, SE1/4 NW1/4.

T41N, R71W

Sec. 13: NE1/4, NE1/4 NW1/4, NW1/4 NW1/4, S1/2 NW1/4,
SW1/4, NE1/4 SE1/4, NW1/4 SE1/4, SW1/4 SE1/4,
SE1/4 SE1/4.
Sec. 14: E1/2 E1/2, NE1/4 NW1/4 NE1/4.
Sec. 23: E1/2 NE1/4, N1/2 NE1/4 SE1/4, SE1/4 NE1/4 SE1/4.
Sec. 24: Lot 1, lot 2, S1/2 NE1/4, NW1/4, N1/2 SW1/4,
N1/2 SW1/4 SW1/4, SE1/4 SW1/4 SW1/4, SE1/4 SW1/4, SE1/4.
Sec. 25: Lot 1, lot 2, N1/2 NE1/4 NW1/4.

ROCHELLE HILLS

The Rochelle Hills tract is approximately 45 miles south of Gillette in Campbell County, Wyoming. The land is used primarily for livestock grazing. There is some oil and gas production in the area.

COAL DATA

The 502 million tons of recoverable federal coal in this tract amounts to about 7% of the federal coal currently being considered for leasing in the Powder River region. The recoverable committed and uncommitted federal coal in the tract amounts to 563 million tons. The estimated annual production at full capacity would be 18.8 million tons.

The economically recoverable seams of subbituminous coal in this tract are the Upper Wyodak and the Lower Wyodak. The Upper Wyodak averages 47 feet in thickness; the Lower Wyodak, 41 feet. Overburden thickness ranges from 0 to 400 feet and interburden from 1 to 102 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. The main Burlington Northern rail line adjoins the tract on the west. The nearest active mines are the Antelope Mine, which adjoins the tract to the southwest, and the North Antelope Mine, adjacent to the northeast part of the tract.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. The tract overlies parts of two KGSs, which are in secondary recovery. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

Development of this tract would disturb habitat that supports approximately 18 to 20 antelope and 32 mule deer. The reclaimed habitat would be best suited for antelope use. Sage grouse summer range would be destroyed, and the reclaimed land would be less suitable habitat for grouse during any season.

One golden eagle nest on the tract was active in 1982. There was another nest site on the tract until 1980, but the nest has since been destroyed. The buffer zone surrounding the active nest is unsuitable for mining. In addition, the buffers for three eagle nests outside the tract extend into the Rochelle Hills tract. Even with complete protection for the nesting eagles, some loss of prey base would result from mining in this tract.

There are two black-tailed prairie dog towns on the tract. No search has been conducted for black-footed ferrets in either town. There is no record of historic sightings of black-footed ferrets in the general vicinity of the tract. The towns would be destroyed if ferrets are not present.

Bald eagles are common in the tract area; there is a communal night roost approximately 2 miles east of the tract. The only negative impact on bald eagles would be a minor loss of prey base.

Cultural Resources

About 3,840 acres of the tract have been intensively inventoried for cultural resources, and 47 sites have been identified. An intensive inventory of the rest of the tract must be done before any surface disturbance takes place. All known sites and additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are moderately deep and well drained. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15 inches; the average growing season is 130 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Vegetative productivity could increase as much as 100% on the tract.

Employment, Income, and Population

Development of a mine on this tract would generate about 910 new jobs in Campbell County and add about $22.9 million to the county's total income by 1990. This would represent a 4.3% increase in total county income.

The population increase in the county is projected to be 1,750 people, 870 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3.7% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 476 acres a year—including 320 acres for mine facilites—losses to annual agricultural receipts would be negligible because all acreage to be disturbed is used for cattle production. A maximum of 1,260 acres would be removed from production at any one time.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
ROCHELLE HILLS COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	6,625	
COAL INFORMATION		
Coal quality	Subbituminous; 8,586 BTUs per pound, 0.26% sulfur	
Recoverable reserves	563 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	2.87 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,586 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 228 to 1 for the Rochelle Hills tract.	

EFFECTS OF LEASING AND DEVELOPMENT

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of Wyo. 24-hour standard and federal secondary and primary 24-hour standards in 1995, and of Wyo. and federal secondary standards during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	Wells are significant source of livestock water; yields vary.	Destruction of wells. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Ephemeral stream in part of tract; four small livestock reservoirs.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Low
Alluvial valley floors	None		
Wildlife	Antelope and mule deer common. One golden eagle nest on tract; three more outside with buffers that overlap tract. Bald eagles roost near tract in winter. Two prairie dog towns.	Loss of some antelope and deer; reclaimed tract poorer habitat for deer, better for antelope. Buffers would protect eagle nests but some loss of prey. If no ferrets present, prairie dog towns destroyed.	Moderate
Cultural resources	About 3,840 acres have been intensively inventoried; 47 sites known. Inventory of rest of tract and evaluation of any sites for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High

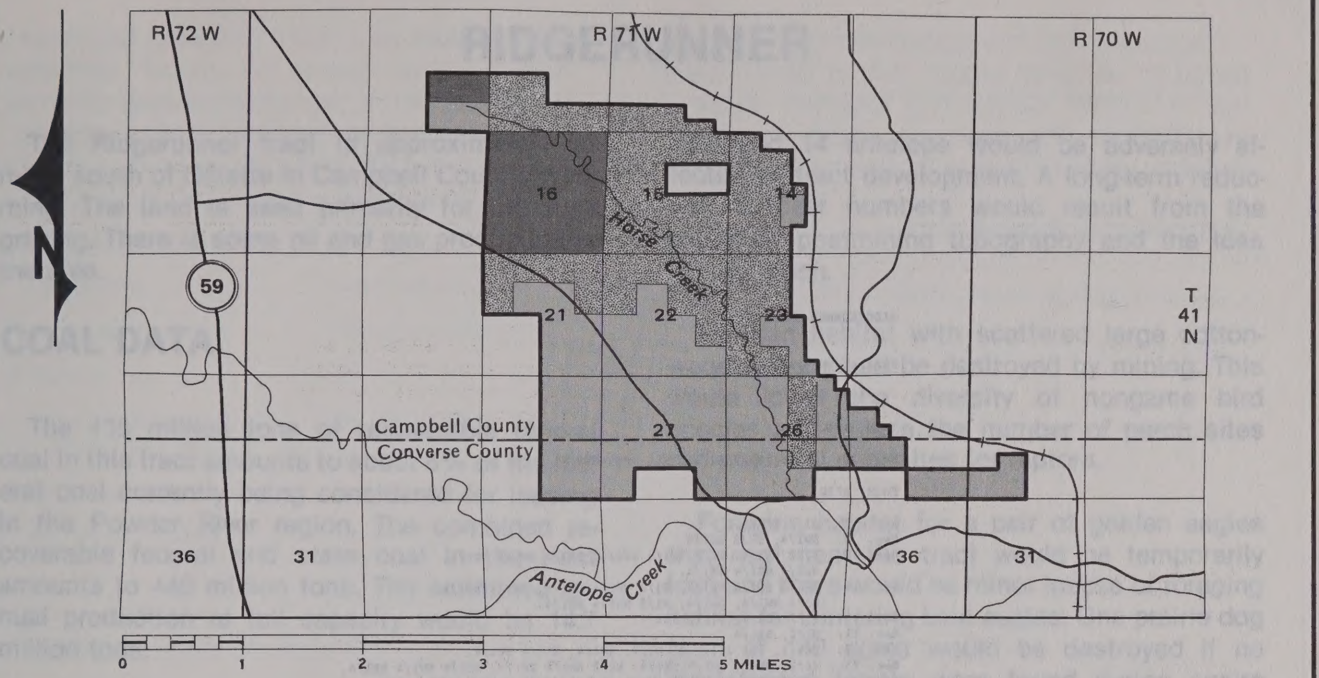
ROCHELLE HILLS SUMMARY, Page 2

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Visual resources	Landscape character is subtype 6; variety class A on 40% of tract; C on rest. Visual quality objective is partial retention for Class A area, modification or maximum modification for rest.	Variety class in 40% of tract would be permanently reduced from A to C. Visual quality in rest of tract would revert to original after reclamation.	High
Wilderness/Special management areas	None		
Unsuitability criteria	Buffer zone for eagle nest on tract; buffers for three nests outside tract overlap tract. Two prairie dog towns.	Eagle buffers unsuitable for mining. Prairie dog towns would have to be inventoried for black-footed ferrets before mining could begin.	High
LAND USES			
Major uses	Grazing and wildlife habitat. Power line and water pipelines cross tract.	Disturbance of 156 acres per year. Power line and pipelines would be moved.	Low
Oil and gas	Tract overlies parts of Logan Draw and Teckla known geologic structures.	Oil and gas exploration activities would be delayed until mine reclamation was completed.	Low
Transportation	County road runs through northwest part of tract; Wyo. 59 is 6 miles west. Main rail line is just west of tract.	County road would be moved. Rail loop and 1-mile access road would be built.	

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 2	Assumes that all 476 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	910 more jobs	26,600	910 more jobs	Low; less than 4% of 1990 employment
Population	Gillette	12,134	16,200	—	23,500	870 more persons	25,000	870 more persons	Low; less than 4% of 1990 population


R 72 W
R 71 W
R 70 W
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15
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Horse Creek
21
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23
Campbell County
Converse County
27
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31
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Antelope Creek
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5 MILES

Surface Ownership

▨ Federal

▨ State

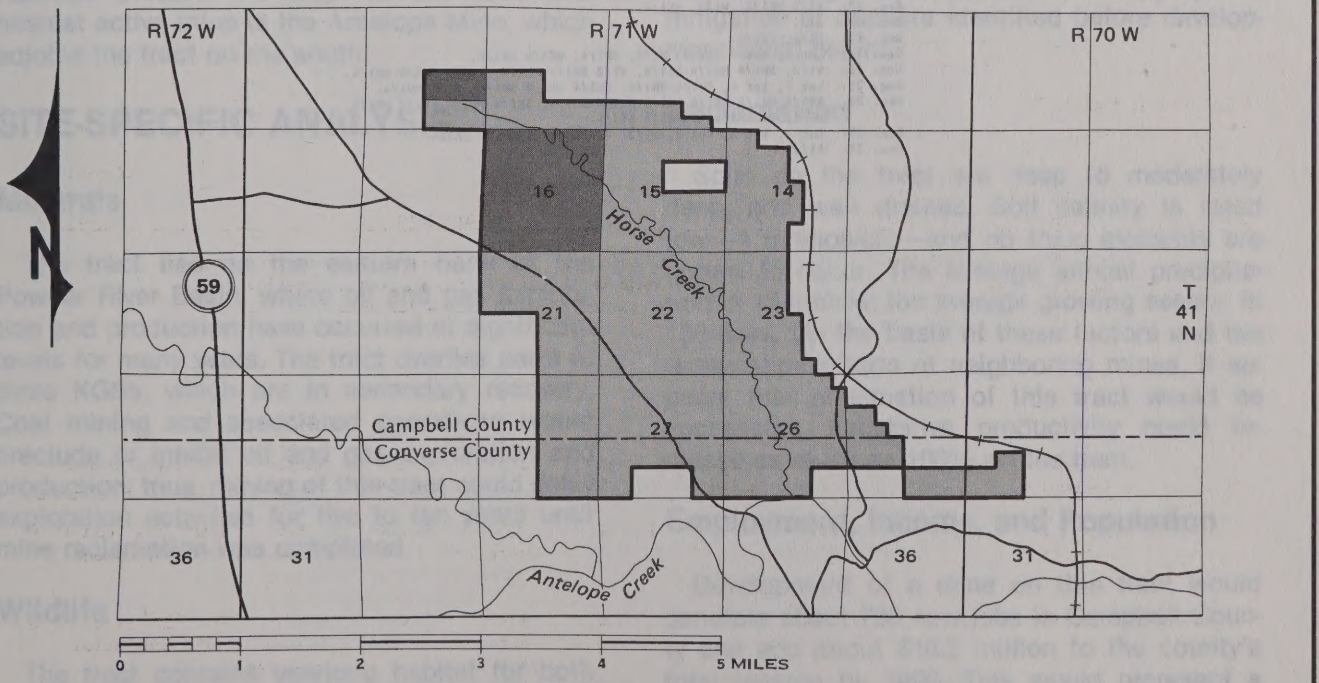
▨ Private

Coal Ownership

▨ Federal

▨ State

▨ Private (none on this map)


R 72 W
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Campbell County
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Antelope Creek
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4
5 MILES

Ridgerunner

LEGAL DESCRIPTION

RIDGERUNNER TRACT

Federal Uncommitted Coal

T41N, R70W

Sec. 30: Lot 4, S1/2NE1/4SW1/4, SE1/4SW1/4

T41N, R71W

Sec. 8: S1/2 SE1/4.
Sec. 9: SW1/4, S1/2 SE1/4.
Sec. 10: S1/2 SW1/4, W1/2 SW1/4 SE1/4, SE1/4 SW1/4 SE1/4, SW1/4 SE1/4 SE1/4.
Sec. 14: SW1/4 SW1/4 NE1/4, S1/2 NE1/4 NW1/4, NW1/4 NW1/4, S1/2 NW1/4, SW1/4, W1/2 NW1/4 SE1/4.
Sec. 15: N1/2 NE1/4, W1/2, SE1/4.
Sec. 21: N1/2, SE1/4.
Sec. 22: Lot 1, lot 2 lot 3, N1/2, SW1/4, NE1/4 SE1/4.
Sec. 23: W1/2, SW1/4 NW1/4 SE1/4, W1/2 SW1/4 SE1/4, SE1/4 SW1/4 SE1/4.
Sec. 25: Lot 7, lot 8, SW1/4 NW1/4, SW1/4 SE1/4 NW1/4, N1/2 SW1/4.
Sec. 26: SE1/4 NE1/4 NE1/4, W1/2 NE1/4 NE1/4, SE1/4 NE1/4, W1/2 NE1/4, W1/2, N1/2 SE1/4, SW1/4 SE1/4.
Sec. 27: Lot 1, lot 2, lot 3, N1/2, N1/2 SE1/4, SE1/4 SE1/4.
Sec. 28: E1/2.

Total Tract

T41N, R70W

Sec. 30: Lot 4, S1/2NE1/4SW1/4, SE1/4SW1/4

T41N, R71W

Sec. 8: SE1/4.
Sec. 9: SW1/4, S1/2 SE1/4.
Sec. 10: S1/2 SW1/4, W1/2 SW1/4 SE1/4, SE1/4 SW1/4 SE1/4, SW1/4 SE1/4 SE1/4.
Sec. 14: SW1/4 SW1/4 NE1/4, S1/2 NE1/4 NW1/4, NW1/4 NW1/4, S1/2 NW1/4, SW1/4, W1/2 NW1/4 SE1/4.
Sec. 15: N1/2 NE1/4, W1/2, SE1/4.
Sec. 16: All.
Sec. 21: N1/2, SE1/4.
Sec. 22: Lot 1, lot 2 lot 3, N1/2, SW1/4, NE1/4 SE1/4.
Sec. 23: W1/2, SW1/4 NW1/4 SE1/4, W1/2 SW1/4 SE1/4, SE1/4 SW1/4 SE1/4.
Sec. 25: Lot 7, lot 8, SW1/4 NW1/4, SW1/4 SE1/4 NW1/4, N1/2 SW1/4.
Sec. 26: SE1/4 NE1/4 NE1/4, W1/2 NE1/4 NE1/4, SE1/4 NE1/4, W1/2 NE1/4, W1/2, N1/2 SE1/4, SW1/4 SE1/4.
Sec. 27: Lot 1, lot 2, lot 3, N1/2, N1/2 SE1/4, SE1/4 SE1/4.
Sec. 28: E1/2.

RIDGERUNNER

The Ridgerunner tract is approximately 55 miles south of Gillette in Campbell County, Wyoming. The land is used primarily for livestock grazing. There is some oil and gas production in the area.

COAL DATA

The 415 million tons of recoverable federal coal in this tract amounts to about 6% of the federal coal currently being considered for leasing in the Powder River region. The combined recoverable federal and state coal in the tract amounts to 440 million tons. The estimated annual production at full capacity would be 14.7 million tons.

The recoverable seams of subbituminous coal in the tract are the Upper Wyodak and the Lower Wyodak. The Upper Wyodak averages 42 feet in thickness, the Lower Wyodak, 33 feet. Overburden thickness ranges from 15 to 400 feet; interburden thickness ranges from 10 to 108 feet.

The coal would be recovered by a truck-and-shovel operation, a surface mining method. It would be transported by rail for steam generation. The main line of the Burlington Northern Railroad borders the tract to the east. The nearest active mine is the Antelope Mine, which adjoins the tract on the south.

SITE-SPECIFIC ANALYSIS

Minerals

The tract lies on the eastern flank of the Powder River Basin, where oil and gas exploration and production have occurred at significant levels for many years. The tract overlies parts of three KGSs, which are in secondary recovery. Coal mining and associated operations would preclude or inhibit oil and gas exploration and production; thus, mining of this tract could delay exploration activities for five to ten years until mine reclamation was completed.

Wildlife

The tract contains yearlong habitat for both mule deer and antelope. Approximately 25 mule deer and 14 antelope would be adversely affected by tract development. A long-term reduction in deer numbers would result from the smoother postmining topography and the loss of sagebrush.

Riparian habitat with scattered large cottonwood trees would be destroyed by mining. This would lower the diversity of nongame bird species and reduce the number of perch sites and potential nest sites for raptors.

Foraging habitat for a pair of golden eagles that nest near the tract would be temporarily lost, and there would be minor losses of foraging habitat for wintering bald eagles. One prairie dog town of 140 acres would be destroyed if no black-footed ferrets were found during onsite surveys.

Cultural Resources

About 1,600 acres of the tract have been intensively inventoried for cultural resources, and 29 sites have been identified. An intensive inventory of the rest of the tract must be done before any surface disturbance takes place. All known sites and additional archeological or historic sites identified would have to be evaluated for National Register eligibility, and appropriate mitigation of impacts identified before development could begin.

Reclamation

Soils on the tract are deep to moderately deep, and well drained. Soil salinity is rated low—4 mmhos/cm—and no toxic elements are known to occur. The average annual precipitation is 15 inches; the average growing season is 130 days. On the basis of these factors and the reclamation efforts at neighboring mines, it appears that reclamation of this tract would be successful. Vegetative productivity could increase as much as 100% on the tract.

Employment, Income, and Population

Development of a mine on this tract would generate about 730 new jobs in Campbell County and add about $18.3 million to the county's total income by 1990. This would represent a 3.4% increase in total county income.

The population increase in the county is projected to be 1,400 people, 700 of whom would live in Gillette. Community facilities would be expanded to the levels necessary to accommodate this 3% increase in population.

Agricultural Economics

Assuming that development of the tract would disturb 480 acres a year—including 320 acres for mine facilites—losses to annual agricultural receipts would be negligible because all acreage to be disturbed is used for cattle production. A maximum of 1,280 acres would be removed from production at any one time.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
RIDGERUNNER COAL LEASING TRACT

Element	Present Situation	Comments
TRACT ACREAGE	5,396	
COAL INFORMATION		
Coal quality	Subbituminous; 8,617 BTUs per pound, 0.26% sulfur	
Recoverable reserves	440 million tons	
Recovery rate	90%	
Maintenance tract or new production	New production	
Stripping ratio	3.95 : 1	
Net energy analysis	One pound of coal from this tract would produce 8,617 BTUs. About 37.7 BTUs would be used to produce 1 pound of coal. Therefore, the ratio of energy produced to energy expended would be 229 to 1 for the Ridgerunner tract.	

EFFECTS OF LEASING AND DEVELOPMENT

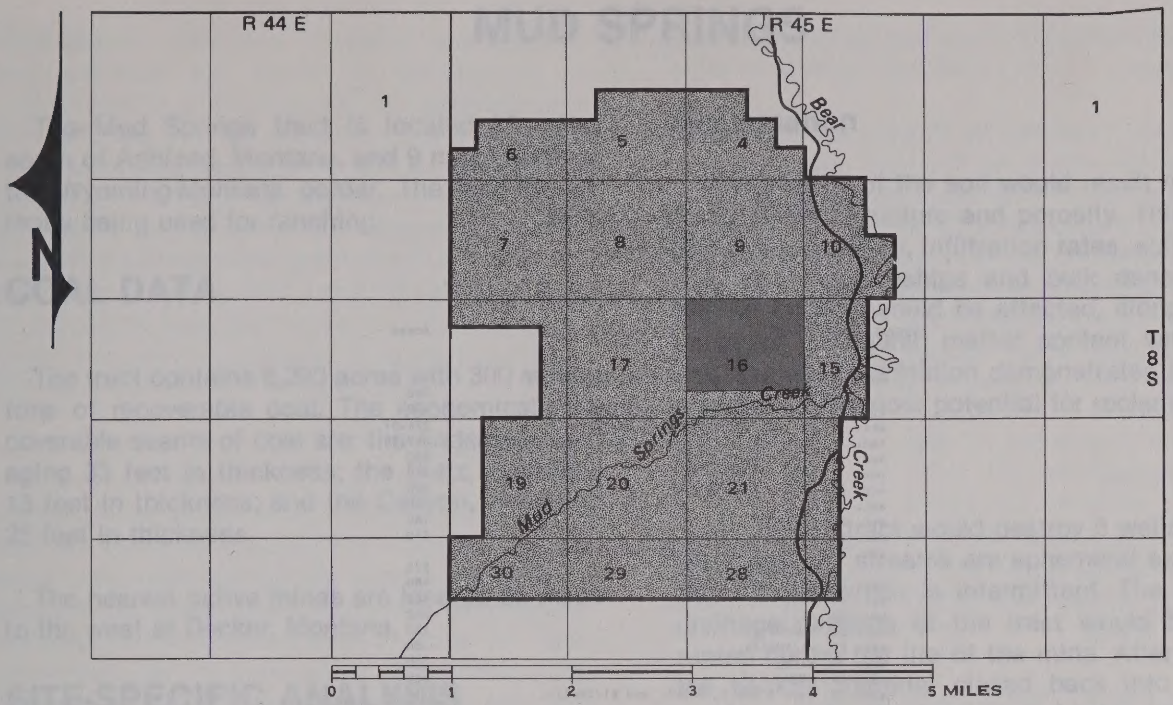
Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
RESOURCES			
Air quality	Good	Potential violation of federal secondary and Wyo. 24-hour standards in 1990, of same plus federal primary standard in 1995, of same plus Wyo. annual standard during life of mine.	Moderate
Reclamation potential	Reclamation good on mines in area	Potential is good	Low
Groundwater	Wells used for livestock; one yields 25 gallons per minute; most less. Quality suitable for livestock.	Destruction of wells. Supplies could be replaced at greater cost by drilling deeper.	Moderate
Surface water	Horse Creek, an ephemeral stream, is principal drainage; no perennial streams.	During mining, loss of livestock and wildlife supply, disruption of drainage patterns, change in flow characteristics, possible increase in dissolved solids. Could be restored with reclamation.	Low
Alluvial valley floors	None identified		
Wildlife	Mule deer and antelope on tract yearlong. Golden eagles that nest nearby and bald eagles that winter near tract may hunt here. One prairie dog town.	Loss of brush and smoothing of topography would cause long-term reduction in deer--about 25 deer and 14 antelope adversely affected. Loss of some prey species for eagles. If no ferrets present, 140-acre prairie dog town would be destroyed.	Moderate
Cultural resources	About 1,600 acres have been inventoried; 29 sites known. Some are eligible for National Register. Inventory of tract and evaluation for National Register eligibility required before development.	Destruction of any sites present. Appropriate mitigation for any sites will be determined during inventory and Section 106 of National Historic Preservation Act complied with.	High
Visual resources	Landscape character subtype 6; variety class C; visual quality objective is modification.	Short-term modification of visual quality objectives for life of mine. Restored to original after reclamation.	Low

Element	Present Situation	Anticipated Effect of Leasing and Development	Significance of Anticipated Effect
EFFECTS OF LEASING AND DEVELOPMENT (continued)			
RESOURCES (continued)			
Wilderness/Special management areas	None		
Unsuitability criteria	One 140-acre prairie dog town present.	Prairie dog town would have to be inventoried for black-footed ferrets before mining could begin.	Low
LAND USES			
Major uses	Grazing, wildlife habitat. Two pipelines run through tract.	Disturbance of 160 acres per year; pipelines would be relocated.	Low
Oil and gas	Tract overlies parts of three known geologic structures.	Oil and gas exploration activities would be delayed until mine reclamation was completed.	Low
Transportation	Two county roads in tract; rail line parallels east boundary.	Roads would be removed, rail loop would be built.	

AGRICULTURAL ECONOMICS

Affected Community	Affected Element	1979 ($1,000)	Anticipated Effect of Action ($1,000)	Assumptions	Significance of Effect
Campbell County	Annual agricultural receipts	33,900	- 2	Assumes that all 480 acres to be disturbed annually would be devoted to the support of cattle. (This includes 320 acres for mine facilities.)	Low

Element	Affected Community	Situation in 1980	Trend to 1985	Effect of Action in 1985	Trend to 1990	Effect of Action in 1990	Trend to 1995	Effect of Action in 1995	Significance of Effect
Employment	Campbell County	13,406	17,000	—	24,500	730 more jobs	26,600	730 more jobs	Low; less than 3% of 1990 employment
Population	Gillette	12,134	16,200	—	23,500	730 more persons	25,000	700 more persons	Low; less than 3% of 1990 population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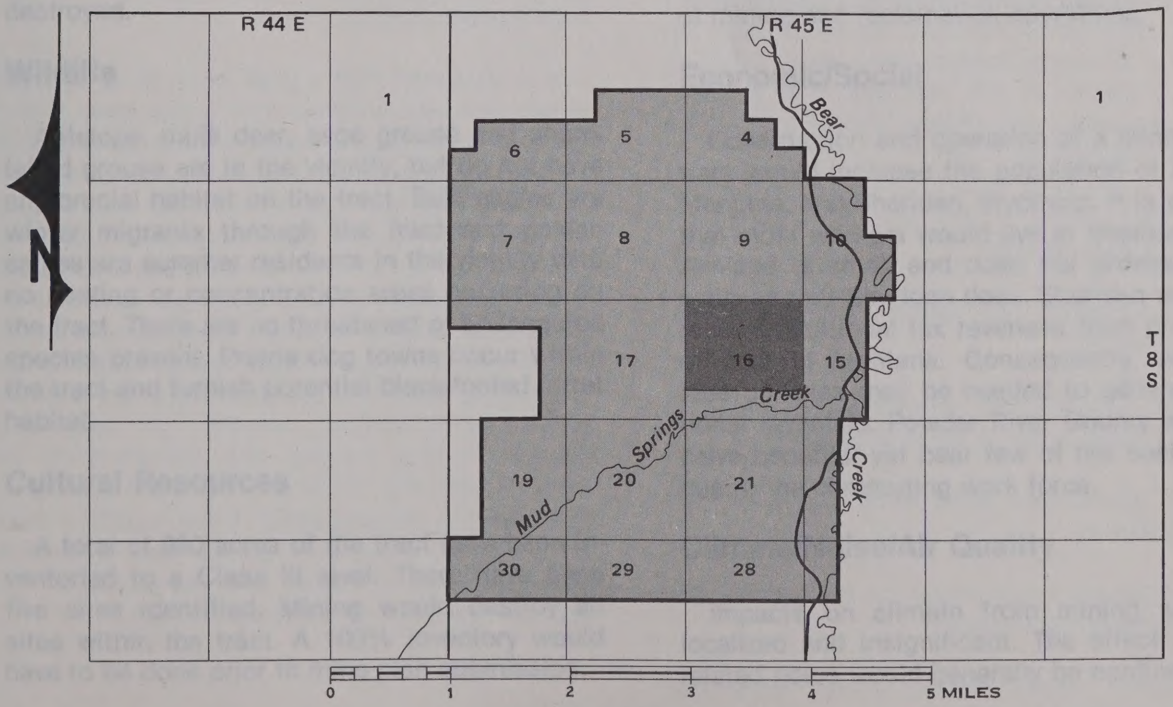
Coal Ownership

- ▨ Federal
- ■ State
- ▨ Private (none on this map)

Surface Ownership

- ▨ Federal (none on this map)
- ■ State
- ▨ Private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Mud Springs

TRACT LEGAL DESCRIPTION

MUD SPRINGS

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 8 S., R. 45 E..,	
sec. 4, lots 13 and 14, SW1/4, W1/2SE1/4, and SE1/4SE1/4;	360
sec. 5, lots 14, 15, and 16 and S1/2;	440
sec. 6, lot 18, E1/2SW1/4, and SE1/4;	274.57
sec. 7, lots 1 to 4, inclusive, E1/2, and E1/2W1/2;	619.16
sec. 8, All;	640
sec. 9, All;	640
sec. 10, W1/2 and W1/2SE1/4;	400
sec. 15, W1/2;	320
sec. 16, S1/2S1/2;	160
sec. 17, All;	640
sec. 18, lot 1, N1/2NE1/4, SE1/4NE1/4, NE1/4NW1/4, and E1/2SE1/4;	275
sec. 19, E1/2 and E1/2W1/2;	480
sec. 20, All;	640
sec. 21, All;	640
sec. 22, W1/2W1/2;	160
sec. 27, W1/2NW1/4;	80
sec. 28, N1/2;	320
sec. 29, N1/2;	320
sec. 30, lots 1 and 2, NE1/4, and E1/2NW1/4.	311.19
Total	7,719.92
Rounded Total	7,720

STATE COMMITTED	
T. 8 S., R. 45 E.,	
sec. 16, N1/2 and N1/2S1/2.	480
Tract Total	8,199.92
Rounded Tract Total	8,200

MUD SPRINGS

The Mud Springs tract is located 36 miles south of Ashland, Montana, and 9 miles north of the Wyoming-Montana border. The land is currently being used for ranching.

COAL DATA

The tract contains 8,200 acres with 300 million tons of recoverable coal. The economically recoverable seams of coal are: the Anderson, averaging 33 feet in thickness; the Dietz, averaging 13 feet in thickness; and the Canyon, averaging 25 feet in thickness.

The nearest active mines are located 28 miles to the west at Decker, Montana.

SITE-SPECIFIC ANALYSIS

Minerals

There are no producing oil and gas wells in the area, although one dry well has been drilled within the tract and six have been drilled within a 5-mile radius of the tract boundary. All were dry. The area is rated as having a low oil and gas potential. There is no known important paleontological material within the tract. Scoria would have to be stockpiled for later use or it would be destroyed.

Wildlife

Antelope, mule deer, sage grouse and sharp-tailed grouse are in the vicinity, but do not have any crucial habitat on the tract. Bald eagles are winter migrants through the tract and golden eagles are summer residents in the vicinity with no nesting or concentration areas occurring on the tract. There are no threatened or endangered species present. Prairie dog towns occur within the tract and furnish potential black-footed ferret habitat.

Cultural Resources

A total of 960 acres of the tract have been inventoried to a Class III level. There have been five sites identified. Mining would destroy all sites within the tract. A 100% inventory would have to be done prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining the tract would destroy 5 wells and 14 reservoirs. All streams are ephemeral except for Bear Creek, which is intermittent. The existing drainage patterns of the tract would be interrupted during the life of the mine. After mining, the backfill material placed back into the pit would elevate the total dissolved solids (TDS) concentrations in any groundwater. There are 6 springs within 2 miles of the tract boundary.

Agriculture

The tract contains 2,138 acres suitable for cropland, with 452 acres currently being used as cropland. The balance of the acreage is used as rangeland, which currently produces 1,639 animal unit months (AUMs) annually. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine on this tract would increase the population of Ashland, Montana, and Sheridan, Wyoming. It is expected that most workers would live at Sheridan, since Ashland is small and does not provide all the services that Sheridan does. Sheridan would not receive additional tax revenues from production of coal in Montana. Consequently, additional fees or taxes may be needed to generate additional revenues. Powder River County would receive benefits, yet bear few of the social costs due to the commuting work force.

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effect of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere.

A report prepared by PEDCo for the BLM indicates that mining on this tract could cause the 24-hour level of total suspended particulates to reach 242 micrograms per cubic meter in 1990, 381 in 1995, and 314 during the life of the mine. The 1990 level would exceed federal secondary and Montana standards; the 1995 level and the mine life level would exceed the Montana standard and both secondary and primary federal standards.

Recreation

The impact from mining would extend off-site because of the influx of mine workers; thus, surrounding private and public lands may receive additional use.

ANALYSIS OF FACILITIES

The primary use of Powder River Basin coal is for steam generating plants to produce electricity. Large amounts of coal are exported from Montana and Wyoming to Midwestern and Southern electric utilities. Electric generating facilities presently exist in the Powder River Basin in addition to the exportation of coal out of the region. Utah International, in submitting their expression of leasing interest, indicated the possible coal end use would be for two 450-megawatt electric generating facilities to be located on site. The following assumptions were made to assess impacts of the facilities. The assumptions were based on existing literature, facilities and best estimates.

1. There would be two 450-megawatt generating plants.
2. Total construction would occur over a four-year period.
3. The construction phase would have a peak work force of 2,800 employees.
4. The permanent work force would be 200 employees.
5. A 600-acre tract would be needed for the generating facilities.
6. Cooling water would come from the Powder River.
7. Generic impacts predicted would occur regardless of where the facilities were located.

Soils

Erosion losses due to wind and water from ground disturbed during the construction phase would be insignificant. Because of the highly buffered soils in the tract area and downwind, no significant impacts to soils are expected should acid rain occur.

Agriculture

If the 600-acre tract were all rangeland, the annual production of 138 AUMs would be lost. Assuming a similar distribution of soils as found in the Mud Springs tract, it would be expected that 166 acres would be suitable for cropland and could produce 164 tons of hay. Regionally, the loss of agricultural production on the 600 acres would be insignificant.

Water

Water requirements for electric power generating facilities are approximately 9,000 gallons per minute or 13,000 acre-feet per year. The likely source of water is the Powder River. This quantity of water is 3.9 percent of the Powder River's annual average discharge.

Economic/Social

It is expected that a peak work force of 2,800 employees would occur over a four-year period and then drop to a permanent work force of 200 employees. Some of this need would be filled locally, but most of the need would be filled in Ashland, Montana, or Sheridan, Wyoming, or by construction of a new community within the area. Presently, Ashland does not have the resources to absorb an influx of people, as Sheridan does. Sheridan is better equipped to handle expansion, since it is a much larger city and has previously absorbed influxes of population caused by coal mining. Job opportunities for Indians from the Crow and Northern Cheyenne tribes would be enhanced if the facilities were built. The road network would have a tremendous increase in usage and demands for improvements from commuting workers.

Wildlife

The impacts of the facilites on wildlife would be habitat destruction and direct and indirect impacts from the increase in human population. Poaching, road kills, electrocutions, bird mortality from striking powerlines, harassment of wildlife, habitat destruction and disturbance would be the impacts expected from the facilities construction and operation.

Visual Resource Management

The facilities would impact the skyline visually by penetration with structures. These structures—powerlines, stacks, buildings and towers—would impair the naturalness of the area. Buffalo Creek Wilderness Study Area is 20 miles to the east. Emissions from the facilities may affect the visual aesthetics of the area.

Cultural Resources

Based on the Mud Springs tract data, it is expected that at least three cultural sites would be found to exist on a 600-acre tract in the area. These sites would be destroyed.

Recreation

Recreation in the area is limited primarily to deer and bird hunting. Surrounding lands would receive additional pressure for recreational activities. Developed recreational facilities do not exist in the area.

Air Quality

The area would have an increased total suspended particulate level. An individual electric generating facility would not threaten the ambient standard or Class II increment with a clean air background setting such as is present in this area. Presence of Class I areas is the greatest constraint to plant sitings.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
MUD SPRINGS

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Anderson-subbituminous, 8,534 BTUs/lb, sulfur, 0.31%; ash, 4.13% Dietz 1-subbituminous, 8,164 BTUs/lb, sulfur, 0.39%; ash, 3.95% Canyon-subbituminous, 8,214 BTUs/lb, sulfur, 0.34%; ash, 4.65%		Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 300.00 million tons		BLM
Tons per Acre Disturbed	40,500 tons		BLM
Ratio of Recovered BTUs	2.10 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 226 BTUs produced		BLM
Transportation	No rail facilities needed		BLM
Bypass Potential	Not applicable		
Later Delineation Potential (1982 holdovers)	Not applicable		
Expansion of Existing Mines	Not applicable		
Inclusion of State Lands	Leased		Montana Dept. of State Lands

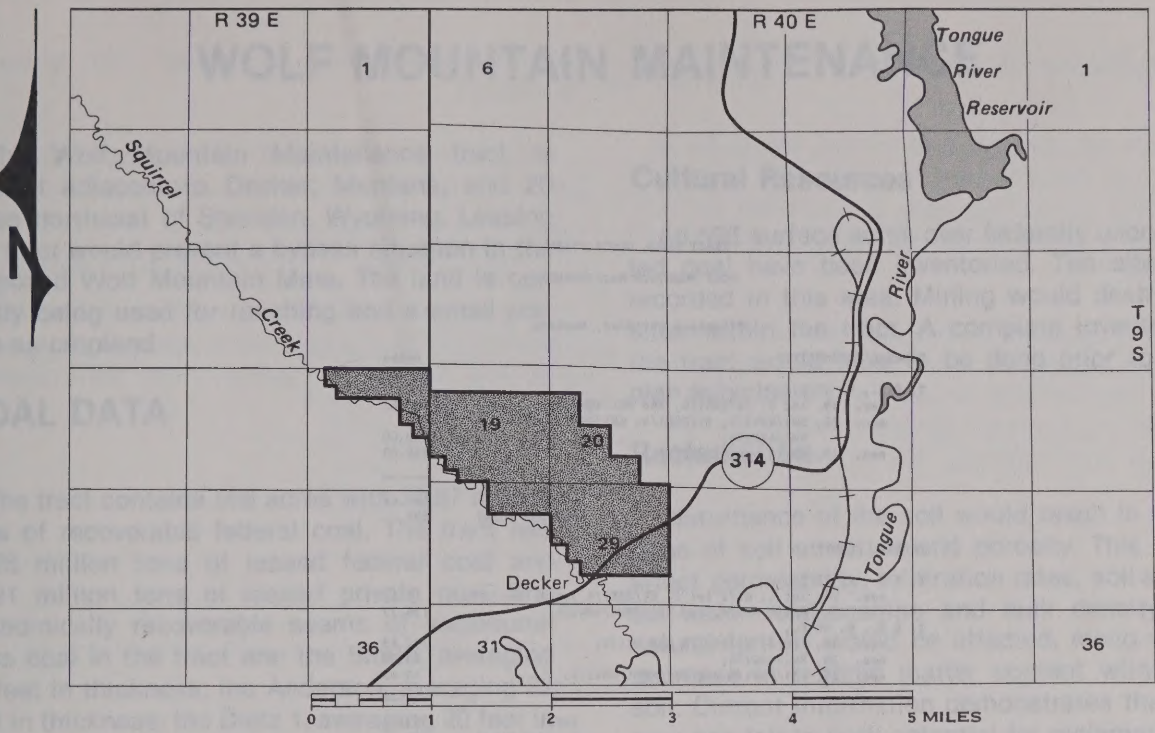
Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	No threatened or endangered species; there are prairie dog towns, migration use by other species	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 7% good, 45% fair, 48% poor, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	High
Water Quality/Quantity			
Surface	Ephemeral and intermittent streams, stock reservoirs	Diversion of streams; interruption of flows	Low
Ground	5 wells	Destruction of wells	Low

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Potential violation of federal secondary and Mont. 24-hour standards in 1990, of same plus federal primary standard in 1995, and of all three during life of mine.	Moderate
Cultural Resources	5 sites identified, inventory imcomplete	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Distruption of Family Farms/Ranches	Owner 1 - 5,886 acres Owner 2 - 515 acres Owner 3 - 240 acres Owner 4 - 880 acres Owner 5 - 200 acres	Landowners have either given consent, in favor of leasing or have not responded	Moderate
Agricultural Productivity	1,639 AUMs produced annually	Interruption of agricultural activity during mine operations	Low
Rural Quality of Life	Rural lifestyle with low population	Increased population and use of the area, change in lifestyle of the area	High
Local Community Services	Services are provided in Ashland, MT, or Sheridan, WY, county maintains and provides roads	MINE: Moderate impact on services. Extensive road rebuilding required in Big Horn and Powder River counties PLANT: Large impact on services due to large numbers of construction work force. A new community may be required.	Moderate
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan amendment of 1982		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Surface Ownership

- ▨ Federal (none on this map)
- ▨ State (none on this map)
- ▨ Private

Coal Ownership

- ▨ Federal
- ▨ State (none on this map)
- ▨ Private
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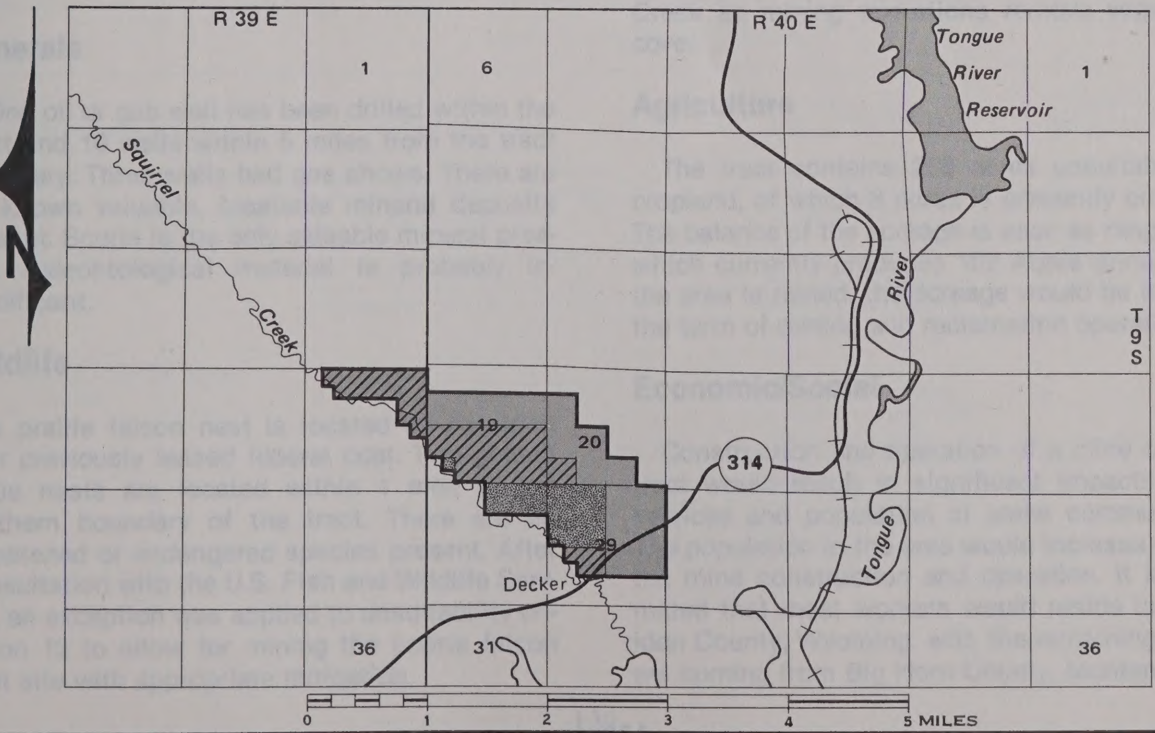
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Wolf Mountain Maintenance

TRACT LEGAL DESCRIPTION

WOLF MOUNTAIN MAINTENANCE

Principal Meridian, Montana

FEDERAL UNCOMMITTED		Acres
T. 9 S., R. 40 E.,		
sec. 19, lot 2, S1/2NE1/4, and SE1/4NW1/4;		157.61
sec. 20, SW1/4NW1/4, N1/2SW1/4, SE1/4SW1/4, and SW1/4SE1/4;		200.00
sec. 29, NE1/4 and N1/2SE1/4.		240.00
	Total	597.61
	Rounded Total	598
FEDERAL COMMITTED		
T. 9 S., R. 39 E.,		
sec. 24, lot 1, N1/2 lot 2, E1/2SE1/4 lot 2, NW1/4NE1/4, NE1/4 NW1/4, and NE1/4NW1/4NW1/4;		156.11
T. 9 S., R. 40 E.,		
sec. 19, lot 3, E1/2SW1/4 and SE1/4;		277.65
sec. 20, SW1/4SW1/4;		40.00
sec. 29, NE1/4SW1/4 and NE1/4NW1/4SW1/4.		50.00
	Total	523.76
	Rounded Total	524
PRIVATE		
T. 9 S., R. 40 E.,		
sec. 19, NE1/4 lot 4;		9.42
sec. 29, NW1/4;		160.00
sec. 30, N1/2NE1/4.		80.00
	Total	249.42
	Rounded Total	249
	Tract Total	1370.52
	Rounded Tract Total	1371

WOLF MOUNTAIN MAINTENANCE

The Wolf Mountain Maintenance tract is located adjacent to Decker, Montana, and 20 miles northeast of Sheridan, Wyoming. Leasing the tract would prevent a bypass situation in the proposed Wolf Mountain Mine. The land is currently being used for ranching and a small portion as cropland.

COAL DATA

The tract contains 598 acres with 30.87 million tons of recoverable federal coal. The tract has 34.26 million tons of leased federal coal and 17.91 million tons of leased private coal. The economically recoverable seams of subbituminous coal in the tract are: the Smith, averaging 12 feet in thickness; the Anderson, averaging 32 feet in thickness; the Dietz 1, averaging 20 feet in thickness, the Dietz 2, averaging 18 feet in thickness; the Anderson/Dietz 1, averaging 54 feet in thickness and the Anderson/Dietz 1 and 2, averaging 80 fet in thickness.

The nearest active mines are the West Decker Mine, located 2 miles to the east, the Spring Creek Mine 5 miles to the north and the East Decker Mine 5 miles to the east.

SITE-SPECIFIC ANALYSIS

Minerals

One oil or gas well has been drilled within the tract and 10 wells within 5 miles from the tract boundary. Three wells had gas shows. There are no known valuable, locatable mineral deposits present. Scoria is the only saleable mineral present. Paleontological material is probably insignificant.

Wildlife

A prairie falcon nest is located on the tract over previously leased federal coal. Two golden eagle nests are located within 1 mile of the northern boundary of the tract. There are no threatened or endangered species present. After consultation with the U.S. Fish and Wildlife Service, an exception was applied to unsuitability criterion 13 to allow for mining the prairie falcon nest site with appropriate mitigation.

Cultural Resources

All 598 surface acres over federally uncommitted coal have been inventoried. Ten sites are recorded in this area. Mining would destroy all sites within the tract. A complete inventory of the tract would have to be done prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining the tract would destroy one well and one reservoir. Squirrel Creek is a perennial stream that receives additional alluvial water as it flows through the tract. Mining would interrupt the drainage of the tract for the life of the mine. The backfill material placed back into the pit would elevate TDS concentrations in the water. Suspended sediment might increase in Squirrel Creek as mining operations remove vegetative cover.

Agriculture

The tract contains 256 acres unsuitable for cropland, of which 8 acres is presently cropped. The balance of the acreage is used as rangeland, which currently produces 102 AUMs annually. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine on this tract would result in significant impacts upon services and population of some communities. The population in the area would increase due to the mine construction and operation. It is estimated that most workers would reside in Sheridan County, Wyoming, with the remaining workers coming from Big Horn County, Montana. The

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effect of mine related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere.

A report prepared by PEDCo for the BLM indicates that mining on this tract could cause the 24-hour level of total suspended particulates to reach 355 micrograms per cubic meter in 1990. This level would exceed the Montana standard, as well as federal secondary and primary standards.

The effect on the Northern Cheyenne Class I air designation is expected to be insignificant.

Recreation

The impact from mining would extend off-site because of the influx of mine workers; thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
WOLF MOUNTAIN MAINTENANCE

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Smith-subbituminous, 8,548 BTUs/lb, sulfur, 0.7%; ash, 6.27% Anderson-subbituminous, 9,591 BTUs/lb, sulfur, 0.25%; ash, 4.31% Dietz 1-subbituminous, 9,744 BTUs/lb, sulfur, 0.37%; ash, 4.02% Dietz 2-subbituminous, 9,463 BTUs/lb, sulfur, 0.32%; ash, 4.82%		Wolf Mtn. Mine, USGS, Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 83.04 million tons		BLM
Tons per Acre Disturbed	60,000 tons		
Ratio of Recovered BTUs	7.34 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 254 BTUs produced		BLM
Transportation	Existing railroad, 2 miles to link		BLM
Bypass Potential	Permit process	Wolf Mountain Mine	BLM
Later Delineation Potential (1982 holdovers)	Not applicable		
Expansion of Existing Mines	Adjacent to proposed mine in permit process	Wolf Mountain Mine	BLM
Inclusion of State Lands	No state lands		Montana Department of State Lands

Impacts to the Natural Environment

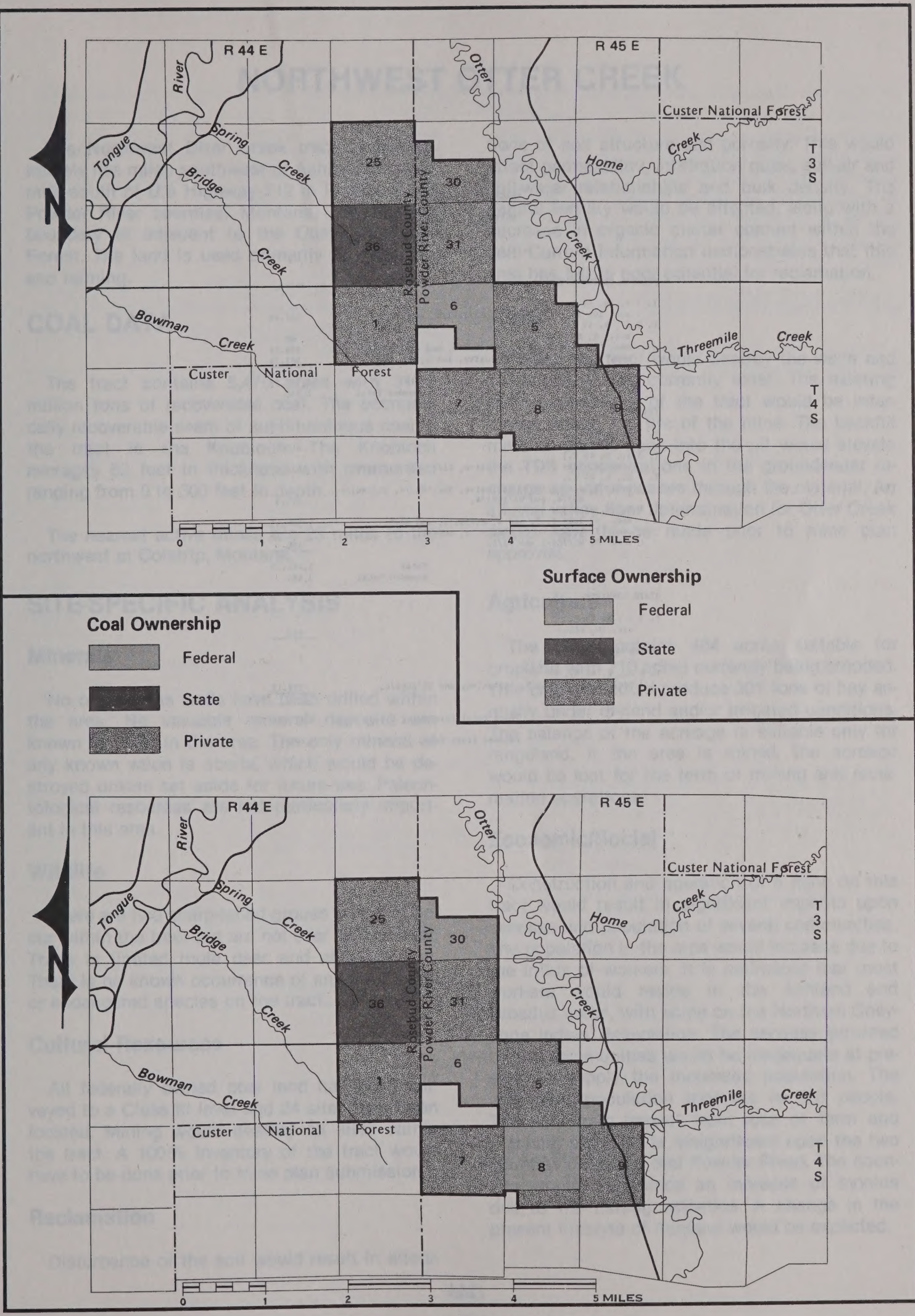
Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Prairie falcon nest, mule deer and antelope wintering areas to the north and west	Habitat destruction, increased poaching and disturbance.	Low with mitigation of prairie faclon nest
Reclamation Potential	Soils rated: 3% good, 46% fair, 51% poor, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	Moderate to High
Water Quality/Quantity			
Surface	1 perennial stream, 1 reservoir	Diversion of stream channel, interruption of flows, possible increase in TDS and suspended sediments	Low

WOLF MOUNTAIN MAINTENANCE, Page 2

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Water Quality/Quantity (continued)			
Ground	1 well	Dewatering of groundwater, increase in TDS	Low
Air Quality	Excellent	Increase in total suspended particulates	Low
Cultural Resources	Sites identified	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	1 owner - 1,371 acres	Little impact-owner is energy-related land owner	Low
Agricultural Productivity	102 AUMs produced annually, 8 acres cropped	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Rural lifestyle associated with adjacent mines.	Little impact. Most personnel will reside in Sheridan, Wyoming.	Low
Local Community Services	Most workers would live in Sheridan, Wyoming.	Little impact on immediate area. Sheridan would receive more demand for services.	Moderate
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan Amendment of 1982		


R 44 E
R 45 E
Tongue
River
Spring
Creek
Bridge
Creek
Bowman
Creek
Otter
Creek
Home
Creek
Threemile
Creek
Custer National Forest
Custer
National
Forest
Rosebud County
Powder River County
T 3 S
T 4 S
25
30
36
31
1
6
5
7
8
9
0
1
2
3
4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private

Northwest Otter Creek

TRACT LEGAL DESCRIPTION

NORTHWEST OTTER CREEK

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 3 S., R. 45 E.,	
sec. 30, lots 2, 3, and 4, E1/2SW1/4, and SE1/4.	351.89
T. 4 S., R. 45 E.,	
sec. 4, SW1/4SW1/4;	40
sec. 6, lots 10 to 17, inclusive, and N1/2SE1/4;	396.58
sec. 8, lots 1 to 6, inclusive, lot 8, and E1/2.	561.78
Total	1,350.25
Rounded Total	1,350
PRIVATE	
T. 3 S., R. 44 E.,	
sec. 25, All.	640
T. 3 S., R. 45 E.,	
sec. 31, lots 1 to 4, inclusive, E1/2, and E1/2W1/2.	628.8
T. 4 S., R. 44 E.,	
sec. 1, lots 1 to 7, inclusive, SW1/4NE1/4, S1/2NW1/4, SW1/4, and W1/2SE1/4.	615.9
T. 4 S., R. 45 E.,	
sec. 5, lots 2, 3, and 4, S1/2N1/2, and S1/2;	587.35
sec. 7, lots 1 to 4, inclusive, and S1/2;	532.28
sec. 9, W1/2E1/2 and W1/2.	480
Total	3,484.33
Rounded Total	3,484
STATE COMMITTED	
T. 3 S., R. 44 E.,	
sec. 36, All.	640
BYPASS COAL	
T. 4 S., R. 45 E.,	
sec. 6, lots 6 to 9, inclusive, and S1/2SE1/4.	229.13
Tract Total (excluding bypass coal)	5,474.58
Rounded Tract Total	5,475

NORTHWEST OTTER CREEK

The Northwest Otter Creek tract is approximately five miles southwest of Ashland and one mile south of U.S Highway 212 in Rosebud and Powder River counties, Montana. The western boundary is adjacent to the Custer National Forest. The land is used primarily for ranching and farming.

COAL DATA

The tract contains 5,475 acres with 317.6 million tons of recoverable coal. The economically recoverable seam of subbituminous coal in the tract is the Knobloch. The Knobloch averages 62 feet in thickness with overburden ranging from 0 to 300 feet in depth.

The nearest active mines are 28 miles to the northwest at Colstrip, Montana.

SITE-SPECIFIC ANALYSIS

Minerals

No oil and gas wells have been drilled within the area. No valuable mineral deposits are known to exist in the area. The only mineral of any known value is scoria, which would be destroyed unless set aside for future use. Paleontological resources are not particularly important in this area.

Wildlife

There are two sharp-tailed grouse leks that occur within the tract but are not over federal coal. There is limited mule deer and antelope use. There is no known occurrence of any threatened or endangered species on the tract.

Cultural Resources

All federally owned coal land has been surveyed to a Class III level and 24 sites have been located. Mining would destroy all sites within the tract. A 100% inventory of the tract would have to be done prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining the tract would destroy the wells and stock ponds that currently exist. The existing drainage patterns of the tract would be interrupted during the life of the mine. The backfill material placed back into the pit would elevate the TDS concentrations in the groundwater recharge as water passes through the material. An alluvial valley floor determination for Otter Creek would have to be made prior to mine plan approvial.

Agriculture

The tract contains 484 acres suitable for cropland with 110 acres currently being cropped. This cropland could produce 301 tons of hay annually under dryland and/or irrigated conditions. The balance of the acreage is suitable only for rangeland. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine on this tract would result in significant impacts upon services and population of several communities. The population in the area would increase due to the influx of workers. It is estimated that most workers would reside in the Ashland and Broadus areas, with some on the Northern Cheyenne Indian Reservation. The services provided by the communities would be inadequate at present to supply the increased population. The estimated population increase is 488 people. The economic impact from loss of farm and ranching products is insignificant upon the two counties (Rosebud and Powder River). The counties would experience an increase of monies due to the mining activities. A change in the present lifestyle of Ashland would be expected.

services provided by a community could be inadequate due to the increase in population. Sheridan County would not receive additional taxes from production of coal in Montana. Consequently, additional fees or taxes may be needed to generate additional revenues. Big Horn County would receive benefits, yet bear few of the social costs due to the community work force.

Climate/Noise/Air Quality

Impacts from mining would would be localized and insignificant. The effects of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere. It is expected that mining the tract would not significantly affect the air quality values of the area nor cause the levels of acceptable values to be exceeded.

Recreation

The impacts from mining would extend offsite because of the influx of mine workers. Thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
NORTHWEST OTTER CREEK

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Knobloch-subbituminous, 8,506 BTUs/lb, sulfur, 0.14%; ash, 5.36%		Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 317.6 million tons		BLM
Tons per Acre Disturbed	88,200 tons		BLM
Ratio of Recovered BTUs	1.87 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 226 BTUs produced		BLM
Transportation	Planned railroad, 85 miles to link		
Bypass Potential	Not applicable		
Later Delineation Potential (1982 holdovers)	Reoffering	Could be redelineated to eliminate bypass situation	BLM
Expansion of Existing Mines	Not applicable		
Inclusion of State Lands	Leased		Montana Dept. of State Lands

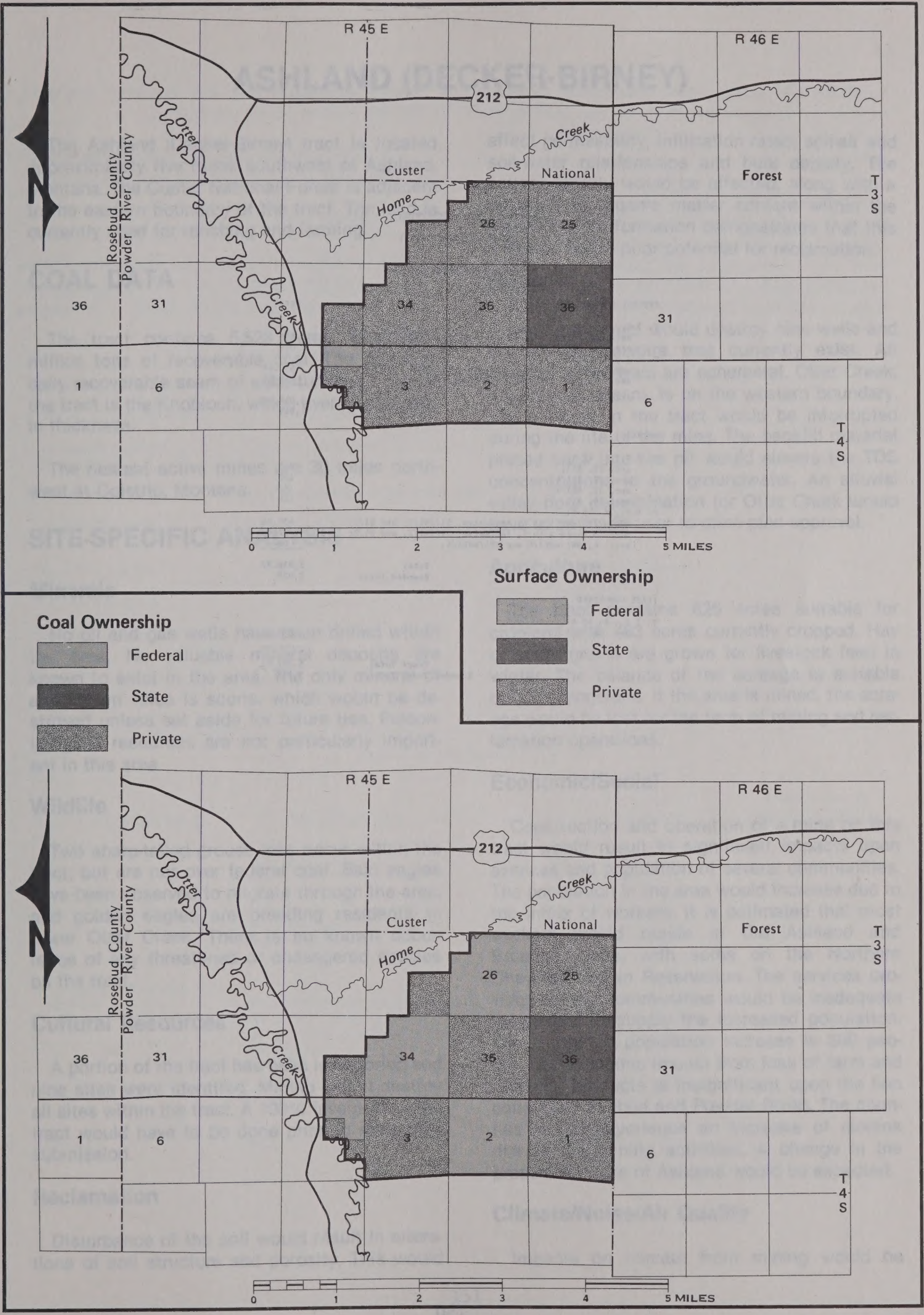
Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Sharp-tailed grouse leks, limited mule deer and antelope use	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 5% poor, 37% fair, 4% good, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	Moderate to High
Water Quality/Quantity			
Surface	All drainages are ephemeral within the tract. Otter Creek, a perennial stream, is in the vicinity	Diversion of stream channels, interruption of flows, decreased annual flows, increased peak flows, destruction of ponds, increased TDS and suspended sediments	Low
Ground	Wells	Destruction of wells, dewatering of groundwater, increased TDS bisection of groundwater seams	

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Potential violation of Mont. 24-hour standard and of federal secondary and primary 24-hour standards in 1990.	Moderate
Cultural Resources	Sites identified, inventory incomplete	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 80.00 acres Owner 2 - 2.61 acres Owner 3 - 314.20 acres Owner 4 - 627.35 acres Owner 5 - 57.39 acres Owner 6 - 640.00 acres	All landowners have given consent to mining of coal	Low
Agricultural Productivity	110 acres hay, 40 acres tame pasture, 1,024 AUMs produced annually	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Small rural community lifestyle	Increased population, change in lifestyle, possibly to an urban lifestyle	High
Local Community Services	Most services available locally with some commuting to neighboring towns for the balance	Increase in the demand on all services	High
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan update of 1979		


R 45 E
R 46 E
212
Otter Creek
Home Creek
Custer National Forest
Rosebud County
Powder River County
T 3 S
T 4 S
36
31
26
25
34
35
36
31
1
6
3
2
1
6
0
1
2
3
4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private
R 45 E
R 46 E
212
Otter Creek
Home Creek
Custer National Forest
Rosebud County
Powder River County
T 3 S
T 4 S
36
31
26
25
34
35
36
31
1
6
3
2
1
6
0
1
2
3
4
5 MILES

Ashland (Decker-Birney)

TRACT LEGAL DESCRIPTION

ASHLAND (DECKER-BIRNEY)

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 3 S., R. 45 E.,	
sec. 26, NE1/4, NE1/4NW1/4, S1/2NW1/4, and S1/2;	600
sec. 34, NE1/4, NE1/4NW1/4, S1/2NW1/4, and S1/2.	600
T. 4 S., R. 45 E.,	
sec. 2, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	637.48
sec. 4, lots 1 and 2 and SE1/4NE1/4.	111.27
Total	1,948.75
Rounded Total	1,949
PRIVATE	
T. 3 S., R. 45 E.,	
sec. 25, All;	640
sec. 27, SE1/4;	160
sec. 33, SE1/4;	160
sec. 35, All.	640
T. 4 S., R. 45 E.,	
sec. 1, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	630.96
sec. 3, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	627.96
sec. 4, SW1/4NE1/4 and NE1/4SE1/4.	80
Total	2,938.92
Rounded Total	2,939
STATE COMMITTED	
T. 3 S., R. 45 E.,	
sec. 36, All.	640
Tract Total	5,527.67
Rounded Tract Total	5,528

ASHLAND (DECKER-BIRNEY)

The Ashland (Decker-Birney) tract is located approximately five miles southwest of Ashland, Montana. The Custer National Forest is adjacent to the eastern boundary of the tract. The land is currently used for ranching and farming.

COAL DATA

The tract contains 5,528 acres with 347.4 million tons of recoverable coal. The economically recoverable seam of subbituminous coal in the tract is the Knobloch, which averages 62 feet in thickness.

The nearest active mines are 30 miles northwest at Colstrip, Montana.

SITE-SPECIFIC ANALYSIS

Minerals

No oil and gas wells have been drilled within the area. No valuable mineral deposits are known to exist in the area. The only mineral of any known value is scoria, which would be destroyed unless set aside for future use. Paleontological resources are not particularly important in this area.

Wildlife

Two sharp-tailed grouse leks occur within the tract, but are not over federal coal. Bald eagles have been observed to migrate through the area, and golden eagles are breeding residents in lower Otter Creek. There is no known occurrence of any threatened or endangered species on the tract.

Cultural Resources

A portion of the tract has been inventoried and nine sites were identifed. Mining would destroy all sites within the tract. A 100% inventory of the tract would have to be done prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining the tract would destroy nine wells and six stock reservoirs that currently exist. All streams in the tract are ephemeral. Otter Creek, a perennial stream, is on the western boundary. The streams in the tract would be interrupted during the life of the mine. The backfill material placed back into the pit would elevate the TDS concentrations in the groundwater. An alluvial valley floor determination for Otter Creek would have to be made prior to mine plan approval.

Agriculture

The tract contains 826 acres suitable for cropland with 463 acres currently cropped. Hay or small grains are grown for livestock feed in winter. The balance of the acreage is suitable only for rangeland. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine on this tract would result in significant impacts upon services and population of several communities. The population in the area would increase due to the influx of workers. It is estimated that most workers would reside in the Ashland and Broadus areas, with some on the Northern Cheyenne Indian Reservation. The services provided by the communities would be inadequate at present to supply the increased population. The estimated population increase is 600 people. The economic impact from loss of farm and ranching products is insignificant upon the two counties (Rosebud and Powder River). The counties would experience an increase of monies due to the mining activities. A change in the present lifestyle of Ashland would be expected.

Climate/Noise/Air Quality

Impacts on climate from mining would be

localized and insignificant. The effect of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere.

A report prepared by PEDCo for the BLM indicates that mining on this tract could cause the 24-hour level of total suspended particulates to reach 174 micrograms per cubic meter in 1990 and 275 in 1995. The 1990 level would exceed the federal secondary standard; the 1995 level would exceed that standard, the Montana standard, and the federal primary standard.

The effect on the Northern Cheyenne Class I air designation is expected to be insignificant.

Recreation

The impact from mining would extend off-site because of the influx of mine workers; thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
ASHLAND (DECKER-BIRNEY)

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Knobloch-subbituminous, 8,822 BTUs/lb, sulfur, 0.176%; ash, 4.46%		USGS, Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 347.4 million tons (includes state leased coal)		USGS
Tons per Acre Disturbed	89,800 tons		BLM
Ratio of Recovered BTUs	1.94 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 234 BTUs produced		BLM
Transportation	Planned railroad, 85 miles to link		BLM
Bypass Potential	Not applicable		
Later Delineation Potential (1982 holdovers)	Reoffering	Could be redelineated to eliminate bypass situation	BLM
Expansion of Existing Mines	Not applicable		
Inclusion of State Lands	Leased		Montana Department of State Lands

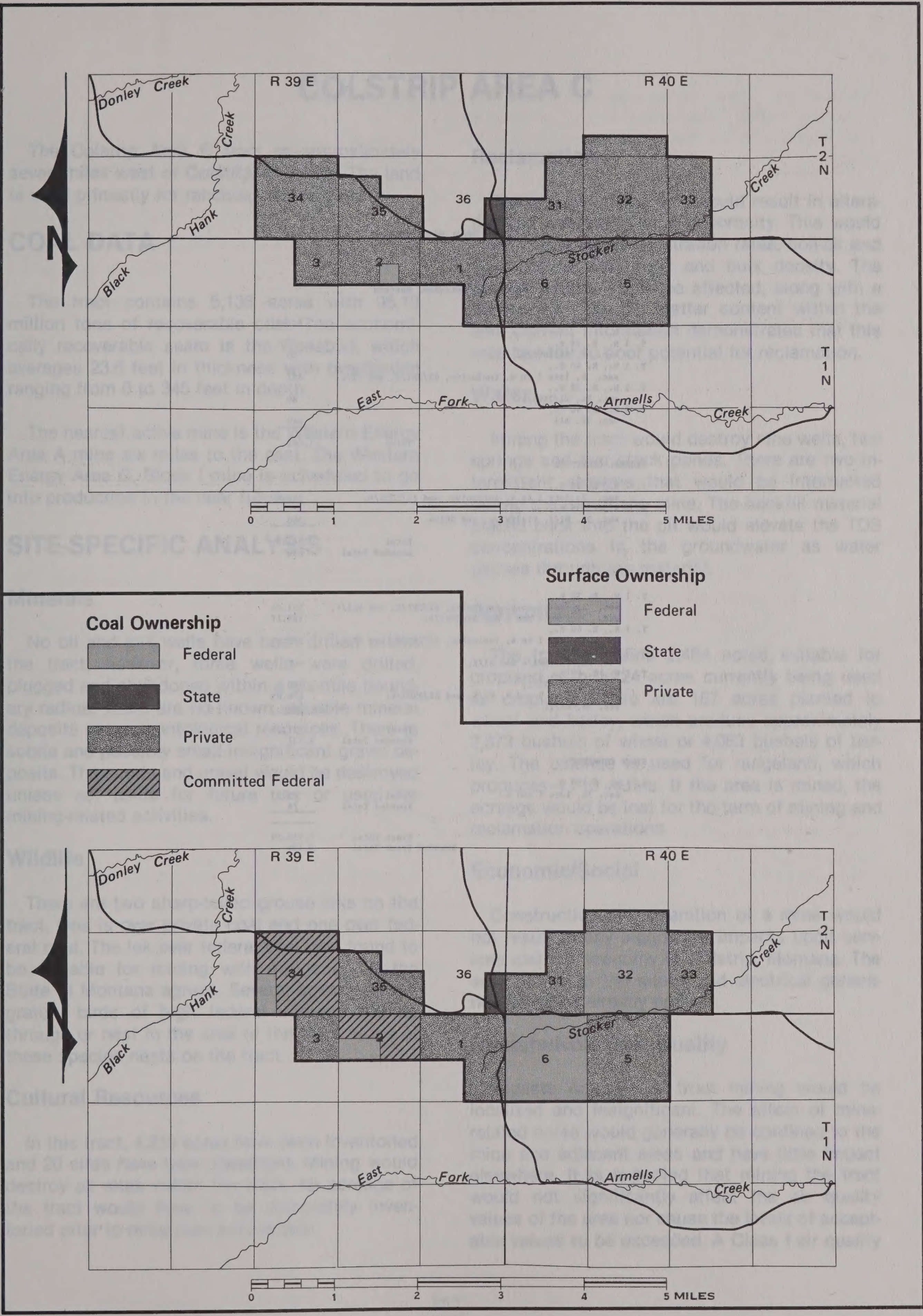
Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Sharp-tailed grouse leks, raptors nest in the area	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 8% good, 39% fair, 53% poor, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	High
Water Quality/Quantity			
Surface	All drainages are ephemeral within the tract. Otter Creek, a perennial stream, is on the western boundary; stock ponds.	Diversion of stream channels, interruption of flows, decreased annual flows, increased peak flows, destruction of ponds, increased TDS and suspended sediments	Low
Ground	Wells	Destruction of wells, dewatering of groundwater	High

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Potential violation of Mont. 24-hour secondary standard in 1990; of same plus Mont. standard and federal primary standard in 1995.	Moderate
Cultural Resources	Sites identified, inventory incomplete	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 1,988 acres Owner 2 - 640 acres Owner 3 - 1,988 acres Owner 4 - 40 acres Owner 5 - 160 acres	Landowners have indicated a preference toward mining or did not respond in a survey taken	Moderate
Agricultural Productivity	893 AUMs produced annually, feed for livestock	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Small rural community lifestyle	Increase in population, change in lifestyle possibly to an urban lifestyle	High
Local Community Services	Most services available locally with some commuting to neighboring towns	Increase in the demand on all services	High
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan update of 1979		


R 39 E
R 40 E
T 2 N
T 1 N
Donley Creek
Hank Creek
Black
Stocker Creek
East Fork Armells Creek
34
35
36
31
32
33
3
2
1
6
5
0
1
2
3
4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private
Committed Federal
R 39 E
R 40 E
T 2 N
T 1 N
Donley Creek
Hank Creek
Black
Stocker Creek
East Fork Armells Creek
34
35
36
31
32
33
3
2
1
6
5
0
1
2
3
4
5 MILES

Colstrip Area C

TRACT LEGAL DESCRIPTION

COLSTRIP AREA C

Principal Meridian, Montana

FEDERAL UNCOMMITTED		Acres
T. 1 N., R. 39 E.,		
sec. 2, S1/2NW1/4.		80
T. 1 N., R. 40 E.,		
sec. 6, lots 1 to 4, inclusive, S1/2N1/2, and S1/2.		681
T. 2 N., R. 39 E.,		
sec. 34, W1/2SW1/4.		80
T. 2 N., R. 40 E.,		
sec. 32, All		640
	Total	1,481
FEDERAL COMMITTED		
T. 1 N., R. 39 E.,		
sec. 2, lots 1 to 4, inclusive, and S1/2NE1/4.		281.8
T. 2 N., R. 39 E.,		
sec. 34, N1/2, E1/2SW1/4, and SE1/4.		560
	Total	841.8
	Rounded Total	842
PRIVATE		
T. 1 N., R. 39 E.,		
sec. 1, lots 1 to 4, inclusive, S1/2N1/2, and SE1/4;		521.84
sec. 3, lots 1 and 2 and S1/2NE1/4.		180.17
T. 1 N., R. 40 E.,		
sec. 5, lots 1 to 4, inclusive, S1/2N1/2, and S1/2.		678.4
T. 2 N., R. 39 E.,		
sec. 35, S1/2NW1/4 and S1/2.		400
T. 2 N., R. 40 E.,		
sec. 29, S1/2S1/2;		160
sec. 31, lots 3 and 4, E1/2, and E1/2SW1/4;		476.85
sec. 33, W1/2.		320
	Total	2,737.26
	Rounded Total	2,737
STATE COMMITTED		
T. 2 N., R. 39 E.,		
sec. 36, lots 3 and 4.	Total	75.53
	Rounded Total	76
	Tract Total	5,135.59
	Rounded Tract Total	5,136

COLSTRIP AREA C

The Colstrip Area C tract is approximately seven miles west of Colstrip, Montana. The land is used primarily for ranching and farming.

COAL DATA

The tract contains 5,136 acres with 95.13 million tons of recoverable coal. The economically recoverable seam is the Rosebud, which averages 23.6 feet in thickness with overburden ranging from 0 to 345 feet in depth.

The nearest active mine is the Western Energy Area A mine six miles to the east. The Western Energy Area C, Block I mine is scheduled to go into production in the near future.

SITE-SPECIFIC ANALYSIS

Minerals

No oil and gas wells have been drilled within the tract; however, three wells were drilled, plugged and abandoned within a six-mile boundary radius. There are no known valuable mineral deposits nor paleontological resources. There is scoria and possibly small insignificant gravel deposits. The scoria and gravel would be destroyed unless set aside for future use or used for mining-related activities.

Wildlife

There are two sharp-tailed grouse leks on the tract. One is over private coal and one over federal coal. The lek over federal coal was found to be suitable for mining with mitigation, if the State of Montana agrees. Several species of migratory birds of high federal interest migrate through or nest in the area of the tract. None of these species nests on the tract.

Cultural Resources

In this tract, 4,239 acres have been inventoried and 20 sites have been identified. Mining would destroy all sites within the tract. All acreage of the tract would have to be completely inventoried prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining the tract would destroy nine wells, two springs and five stock ponds. There are two intermittent streams that would be interrupted during the life of the mine. The backfill material placed back into the pit would elevate the TDS concentrations in the groundwater as water passes through the material.

Agriculture

The tract contains 2,484 acres suitable for cropland with 1,224 acres currently being used as cropland. There are 167 acres planted to wheat and barley, which produce approximately 2,873 bushels of wheat or 4,083 bushels of barley. The balance is used for rangeland, which produces 1,710 AUMs. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine would not result in any significant impacts upon services and the economy of Colstrip, Montana. The area is tied to the mines and electrical generation facilities already present.

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effect of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere. It is expected that mining the tract would not significantly affect the air quality values of the area nor cause the levels of acceptable values to be exceeded. A Class I air quality designation does occur on the Northern Cheyenne Indian Reservation to the south and east. Impacts on the reservation are expected to be low.

Recreation

The impact from mining would extend off-site; thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
COLSTRIP AREA C

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Rosebud-subbituminous, 8,411 BTUs/lb, sulfur, 0.94%; ash, 9.83%		USGS, Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 95.13 million tons (includes state and federally leased coal)		BLM
Tons per Acre Disturbed	22,500 tons		BLM
Ratio of Recovered BTUs	923 billion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 223 BTUs produced		BLM
Transportation	Existing railroad, 6 miles to link/ developed conveyor belt system, 4 miles to link		BLM
Bypass Potential	Considered as an extension		
Later Delineation Potential (1982 holdovers)	Not applicable		
Expansion of Existing Mines	Adjacent to permitted mine	Mine - Colstrip Area C	BLM
Inclusion of State Lands	Leased		Montana Dept. of State Lands

Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Sharp-tailed grouse leks, migratory birds pass through the area	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 19% good, 41% fair, 40% poor, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	Moderate to High
Water Quality/Quantity			
Surface	Two intermittent streams	Diversion of stream channels, interruption of flows, decreased annual flows, increased peak flows, increased suspended sediment	Low
Ground	Wells and springs	Destruction of wells and springs, dewatering of groundwater, increased TDS levels	

COLSTRIP AREA C, Page 2

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Increase in total suspended particulates	Low
Cultural Resources	Sites identified, inventory incomplete	Destruction of all sites	High

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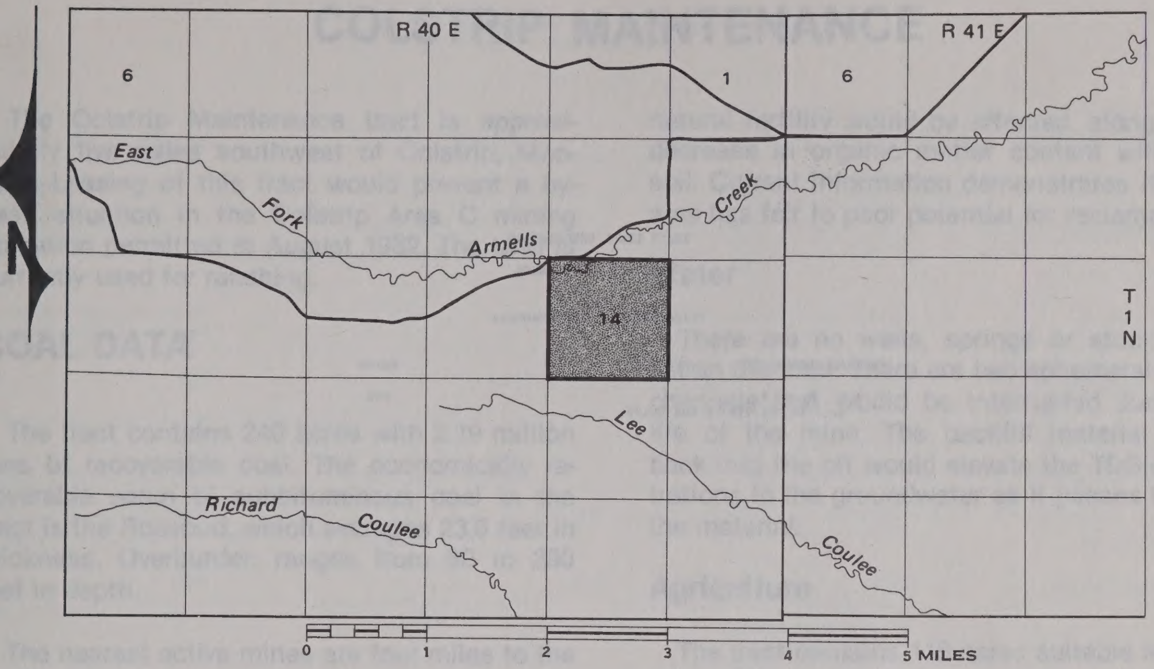
Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 322 acres	Owner of surface land is in favor of mining coal	Low
Agricultural Productivity	2,873 bushels of wheat, 1,710 AUMs produced annually	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Lifestyle of community already associated with mining activity	None expected	Low
Local Community Services	Services available locally	None expected	Moderate
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan amendment of 1982		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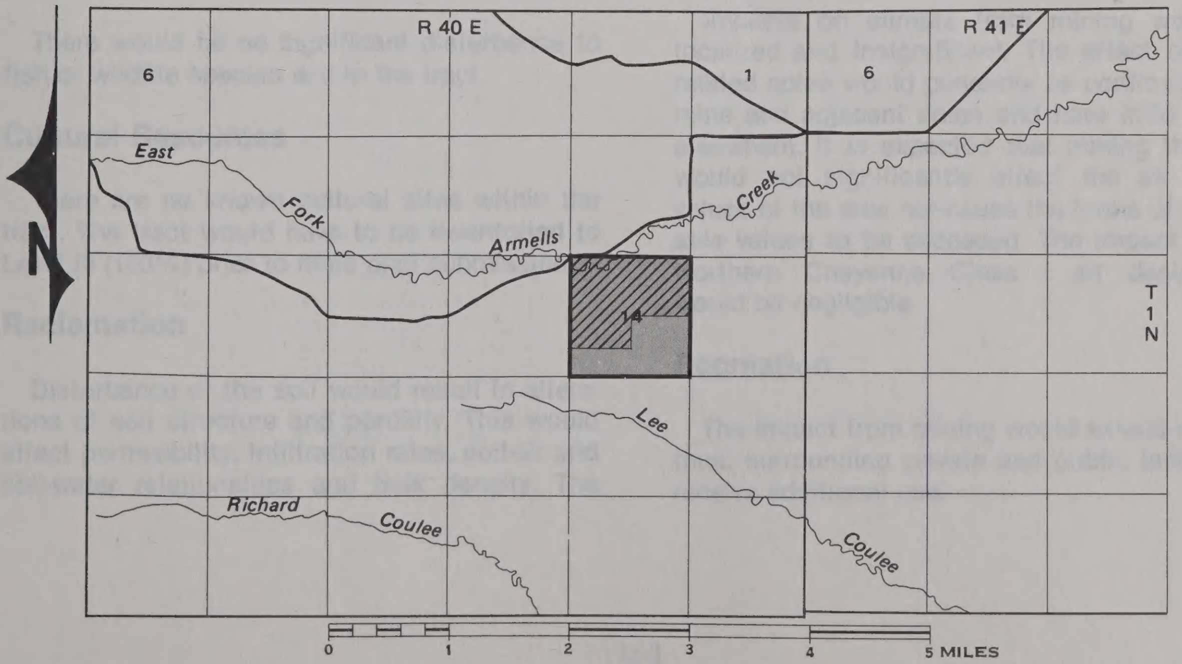
5 MILES

Coal Ownership

- ▒ Federal
- ▓ State (none on this map)
- ░ Private (none on this map)
- ▨ Committed Federal

Surface Ownership

- ▒ Federal (none on this map)
- ▓ State (none on this map)
- ░ Private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5 MILES

Colstrip Maintenance

TRACT LEGAL DESCRIPTION

COLSTRIP MAINTENANCE

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 1 N., R. 40 E., sec. 14, S1/2SW1/4 and SE1/4.	240

COLSTRIP MAINTENANCE

The Colstrip Maintenance tract is approximately five miles southwest of Colstrip, Montana. Leasing of this tract would prevent a bypass situation in the Colstrip Area C mining operation permitted in August 1982. The land is currently used for ranching.

COAL DATA

The tract contains 240 acres with 2.19 million tons of recoverable coal. The economically recoverable seam of subbituminous coal in the tract is the Rosebud, which averages 23.6 feet in thickness. Overburden ranges from 80 to 290 feet in depth.

The nearest active mines are four miles to the northwest.

SITE-SPECIFIC ANALYSIS

Minerals

No oil and gas wells have been drilled within the tract; however, five dry wells have been drilled within a five-mile radius. No valuable locatable mineral deposits are present. There are no known gravel deposits nor paleontological resources.

Wildlife

There would be no significant disturbance to fish or wildlife species within the tract.

Cultural Resources

There are no known cultural sites within the tract. The tract would have to be inventoried to Level III (100%) prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

There are no wells, springs or stock ponds within the tract. There are two ephemeral stream channels that would be interrupted during the life of the mine. The backfill material placed back into the pit would elevate the TDS concentrations in the groundwater as it passes through the material.

Agriculture

The tract contains 119 acres suitable for cropland with no acres currently being used for crops. The entire tract, 240 acres, is currently used for rangeland. If the tract is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Mining of the tract would not result in any significant impacts upon services and the economy of Colstrip. The area is tied to the mines and electrical generation facilities already present.

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effect of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere. It is expected that mining the tract would not significantly affect the air quality values of the area nor cause the levels of acceptable values to be exceeded. The impact on the Northern Cheyenne Class I air designation would be negligible.

Recreation

The impact from mining would extend off-site; thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
COLSTRIP MAINTENANCE

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Rosebud-subbituminous, 8,329 BTUs/lb, sulfur, 1.06%; ash, 10.96%		USGS, Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 2.19 million tons		BLM
Tons per Acre Disturbed	9,100 tons		BLM
Ratio of Recovered BTUs	696 billion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 221 BTUs produced		BLM
Transportation	Existing railroad, 4 miles to link/ developed conveyor belt system, 2 miles to link		BLM
Bypass Potential	Mine permitted--scheduled for production in 1984	Mine - Colstrip Area C, Block 1	BLM
Later Delineation Potential (1982 holdovers)	Not applicable		
Expansion of Existing Mines	Adjacent to permitted mine	Mine - Colstrip Area C, Block 1	BLM
Inclusion of State Lands	No state lands		Montana Department of State Lands

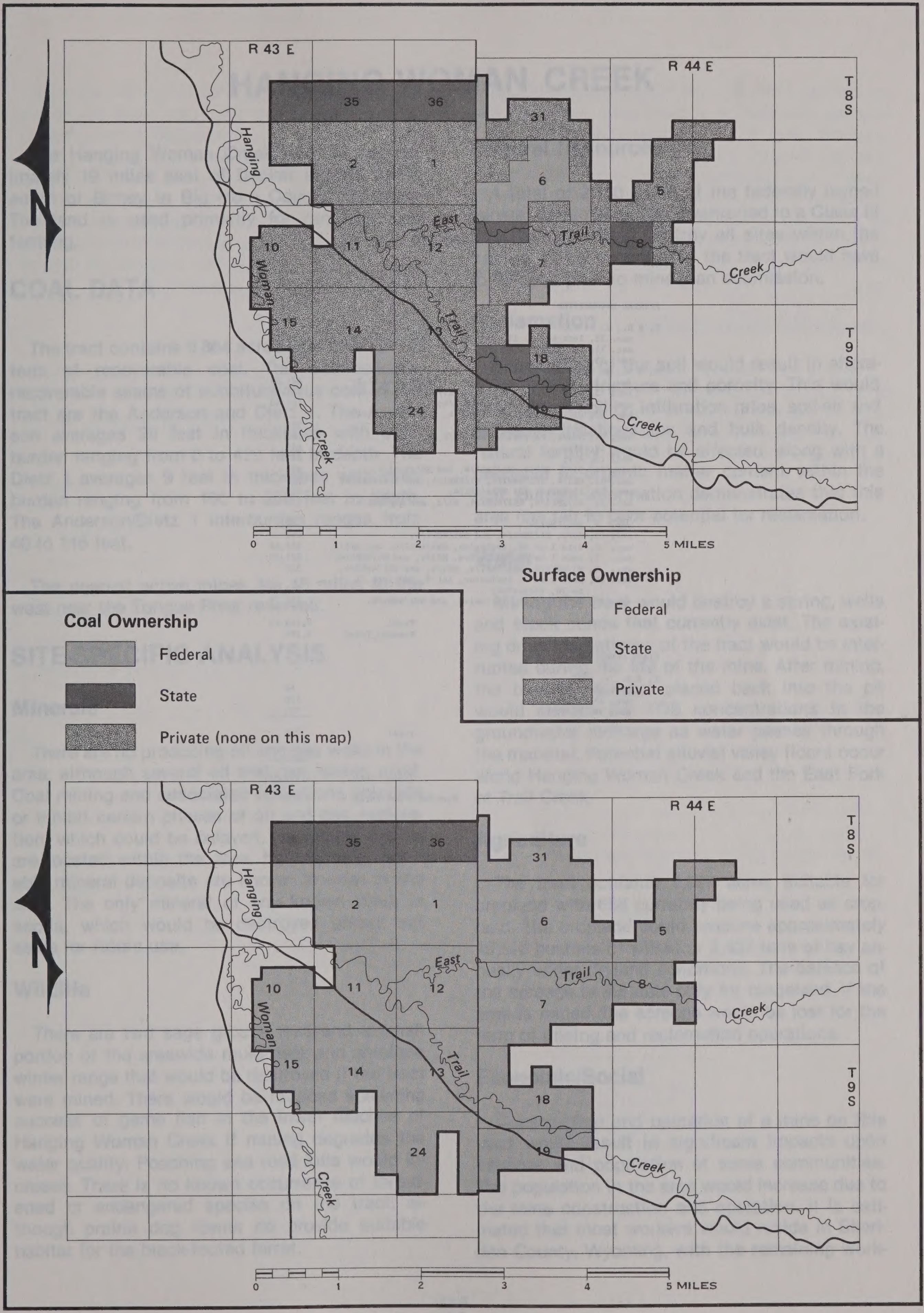
Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Very little use	No disturbance expected	Low
Reclamation Potential	Soils rated: 19% good, 40% fair, 41% poor, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	Moderate to High
Water Quality/Quantity			
Surface	Two ephemeral streams	Diversion of stream channels, interruption of flows, decreased annual flows, increased peak flows, increase in TDS and suspended sediment	Low
Ground	No wells or springs	Dewatering of groundwater, increased TDS levels	Low

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Increase in total suspended particulates	Low
Cultural Resources	Inventory incomplete	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 240 acres	Owner of surface land indicated to favor mining of coal	Low
Agricultural Productivity	58 AUMs produced annually	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Lifestyle of community already associated with mining activities	None expected	Low
Local Community Services	Services available locally	None expected	Low
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan amendment of 1982		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18
24
19
Hanging Woman Creek
East Trail Creek
Trail Creek
0
1
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3
4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private (none on this map)

Hanging Woman Creek

TRACT LEGAL DESCRIPTION

HANGING WOMAN CREEK

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 8 S., R. 44 E.,	
sec. 31, lots 6, 12, 13, and lots 15 to 20, inclusive;	298.79
sec. 32, SE1/4SE1/4;	40
sec. 33, S1/2SW1/4.	80
T. 9 S., R. 43 E.,	
sec. 1, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	645.08
sec. 2, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	643.20
sec. 3, lots 1 and 2 and S1/2NE1/4;	161.40
sec. 10, S1/2NE1/4, E1/2SE1/4NW1/4, SW1/4SE1/4NW1/4, E1/2SW1/4, and SE1/4;	350
sec. 11, NE1/4, E1/2NW1/4, and S1/2;	560
sec. 12, All;	640
sec. 13, All;	640
sec. 14, N1/2, SW1/4, N1/2SE1/4, and SE1/4SE1/4;	600
sec. 15, NE1/4, NE1/4NW1/4, N1/2SE1/4, and SE1/4SE1/4;	320
sec. 23, E1/2NE1/4 and NE1/4SE1/4;	120
sec. 24, N1/2NE1/4, SE1/4NE1/4, W1/2, and E1/2SE1/4.	520
T. 9 S., R. 44 E.,	
sec. 4, NW1/4NW1/4;	40
sec. 5, E1/2, E1/2SW1/4, and SW1/4SW1/4;	440
sec. 6, lots 1 to 20, inclusive, SW1/4NE1/4, and SE1/4;	919.68
sec. 7, lots 1 to 19, inclusive, NE1/4, and N1/2SE1/4;	921.12
sec. 8, W1/2NE1/4, SE1/4NE1/4, NW1/4, and NE1/4SE1/4;	320
sec. 18, lots 4 to 7, inclusive, lot 9, and lots 11 to 20, inclusive;	522.52
sec. 19, lots 1 to 10, inclusive, and NW1/4NE1/4.	401.78
Total	9,183.66
Rounded Total	9,184

STATE COMMITTED	
T. 8 S., R. 43 E.,	
sec. 34, S1/2SE1/4;	80
sec. 35, S1/2;	320
sec. 36, S1/2.	320
Total	720
Tract Total	9,903.66
Rounded Tract Total	9,904

HANGING WOMAN CREEK

The Hanging Woman Creek tract is approximately 19 miles east of Decker and 17 miles south of Birney in Big Horn County, Montana. The land is used primarily for ranching and farming.

COAL DATA

The tract contains 9,864 acres with 400 million tons of recoverable coal. The economically recoverable seams of subbituminous coal in the tract are the Anderson and Dietz 1. The Anderson averages 29 feet in thickness with overburden ranging from 0 to 420 feet in depth. The Dietz 1 averages 9 feet in thickness with overburden ranging from 100 to 200 feet in depth. The Anderson/Dietz 1 interburden ranges from 40 to 116 feet.

The nearest active mines are 15 miles to the west near the Tongue River reservoir.

SITE-SPECIFIC ANALYSIS

Minerals

There are no producing oil and gas wells in the area, although several oil and gas leases exist. Coal mining and associated operations preculde or inhibit certain phases of oil and gas exploration, which could be delayed. No mining claims are located within the area. No claimable valuable mineral deposits are known to exist in the area. The only mineral of any known value is scoria, which would be destroyed unless set aside for future use.

Wildlife

There are two sage grouse leks and a small portion of the areawide mule deer and antelope winter range that would be destroyed if the tract were mined. There would be reduced spawning success of game fish in the lower reaches of Hanging Woman Creek if mining degrades the water quality. Poaching and road kills would increase. There is no known occurrence of threatened or endangered species on the tract, although prairie dog towns do provide suitable habitat for the black-footed ferret.

Cultural Resources

A total of 2,140 acres of the federally owned mineral estate has been inventoried to a Class III level. Mining would destroy all sites within the tract. A 100% inventory of the tract would have to be done prior to mine plan submission.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining the tract would destroy a spring, wells and stock ponds that currently exist. The existing drainage patterns of the tract would be interrupted during the life of the mine. After mining, the backfill material placed back into the pit would elevate the TDS concentrations in the groundwater recharge as water passes through the material. Potential alluvial valley floors occur along Hanging Woman Creek and the East Fork of Trail Creek.

Agriculture

The tract contains 2,927 acres suitable for cropland with 658 currently being used as cropland. The cropland could produce approximately 19,516 bushels of wheat or 2,407 tons of hay annually under dryland conditions. The balance of the acreage is suitable only for rangeland. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine on this tract would result in significant impacts upon services and population of some communities. The population in the area would increase due to the mine construction and operation. It is estimated that most workers would reside in Sheridan County, Wyoming, with the remaining workers coming from Big Horn County, Montana. The services provided by a community would be inadequate due to the increase in population. Sheridan County would not receive additional taxes from production of coal in Montana. Consequently, additional fees or taxes may be needed to generate additional revenues. Big Horn County would receive benefits, yet bear few of the social costs due to the community work force.

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effects of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere.

A report prepared by PEDCo for the BLM indicates that mining on this tract could cause the 24-hour level of total suspended particulates to reach 229 micrograms per cubic meter in 1990, 274 in 1995, and 184 during the life of the mine. The 1990 level would exceed federal secondary and Montana standards; the 1995 level would exceed those standards and the federal primary standard; and the mine life level would exceed the federal secondary standard.

Recreation

The impact from mining would extend off-site because of the influx of mine workers. Thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
HANGING WOMAN CREEK

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Anderson-subbituminous, 8,549 BTUs/lb, sulfur, 0.45%; ash, 5.28% Dietz 1-subbituminous, 8,300 BTUs/lb, Sulfur, 0.6%; ash, 6.9%		USGS, Montana Bureau of Mines and Geology
Coal Quantity	Recoverable - 400.0 million tons (includes state leased coal)		BLM
Tons per Acre Disturbed	40,900 tons		BLM
Ratio of Recovered BTUs	1.14 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 226 BTUs produced		BLM
Transportation	Planned railroad, 30 miles to link		BLM
Bypass Potential	Not applicable		
Later Delineation Potential (1982 holdovers)	Not applicable		
Expansion of Existing Mines	Not applicable		
Inclusion of State Lands	Leased		Montana Department of State Lands

Impacts to the Natural Environment

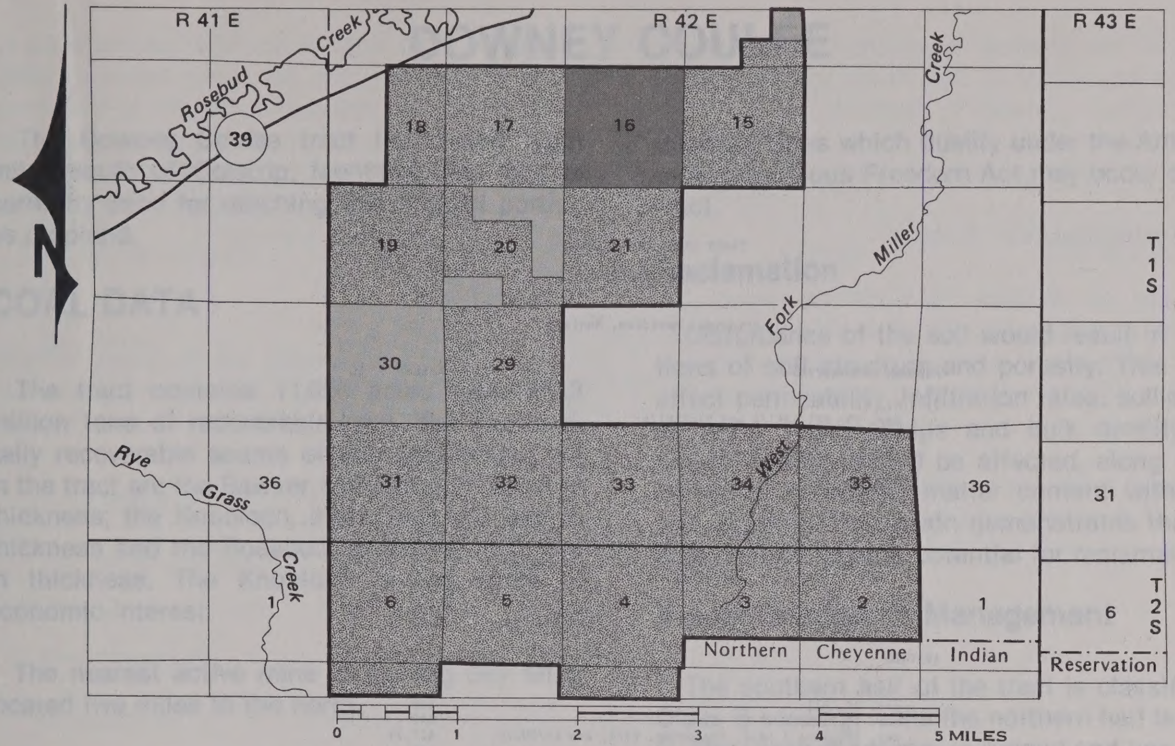
Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Antelope/mule deer winter range adjacent to tract, prairie dog towns, sage grouse leks	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 55% poor, 43% fair, 2% good, fair to poor reclamation potential	Alteration of soil structure, porosity, chemical properties and organics	Moderate to High
Water Quality/Quantity			
Surface	All streams are ephemeral except Hanging Woman, which is perennial and occurs in a small portion of the tract	Diversion of streams, interruption of flows, decreased annual flows, increased peak flows, destruction of ponds and spring, increased total dissolved solids and suspended sediments	Low

HANGING WOMAN CREEK, Page 2

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Water Quality/Quantity (continued)			
Ground	Spring and wells	Destruction of wells, dewatering of groundwater, increased total dissolved solids	Low
Air Quality	Excellent	Potential violation of federal secondary and Mont. 24-hour standards in 1990, of same plus federal primary standard in 1995, and of federal secondary standard during life of mine.	Moderate
Cultural Resources	Sites identified, inventory incomplete	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 6,891 surface acres Owner 2 - 201 surface acres	All landowners have given written consent to mining of federal coal underneath their their property	Low
Agricultural Productivity	62 tons of hay, 2,107 AUMs	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Rural lifestyle with low	Increase in population and use of the area, change in the lifestyle of the area	High
Local Community Services	Services are provided in Ashland or Sheridan. County provides and maintains roads.	Significant impact on services, increased road usage	High
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan amendment of 1982		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Surface Ownership

▨ Federal

▨ State

▨ Private

Coal Ownership

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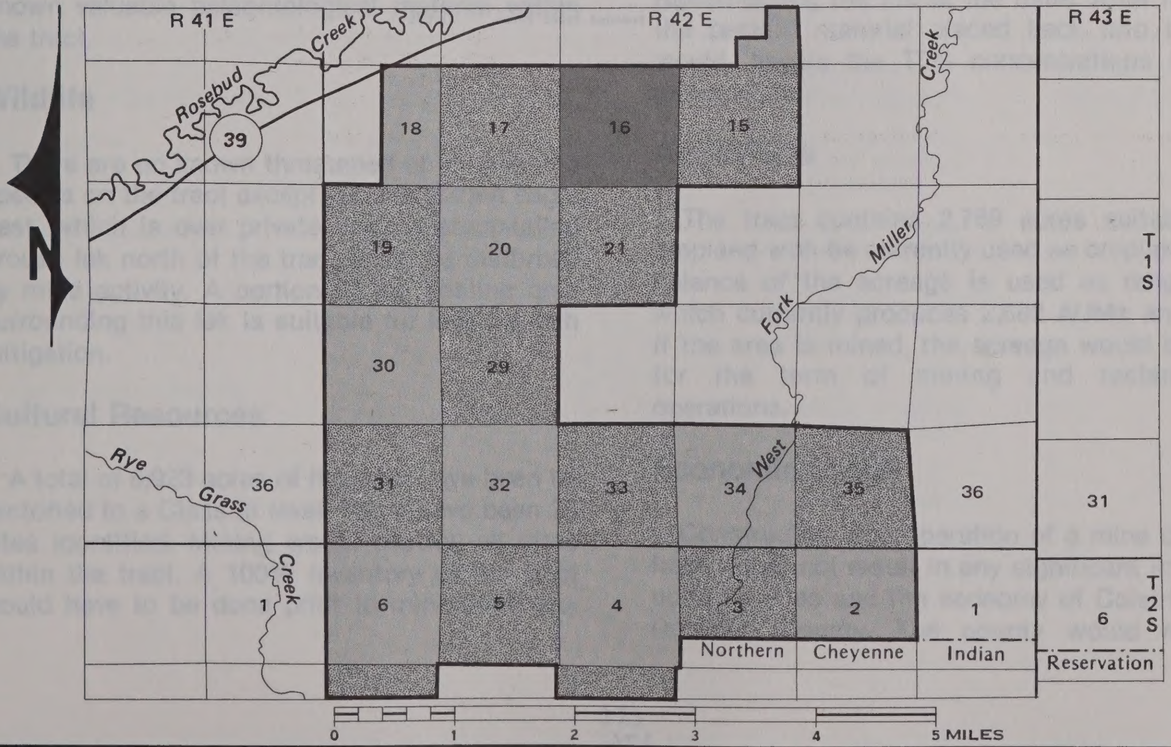
▨ Private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Northern
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Downey Coulee

TRACT LEGAL DESCRIPTION

DOWNEY COULEE

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 1 S., R. 42 E.,	
sec. 10, NE1/4SE1/4 and S1/2SE1/4;	120
sec. 18, E1/2;	320
sec. 20, All;	640
sec. 30, lots 1 to 4, inclusive, E1/2, and E1/2W1/2;	616.4
sec. 32, All;	640
sec. 34, All.	640
T. 2 S., R. 42 E.,	
sec. 2, lots 1 to 4, inclusive, S1/2N1/2, and N1/2S1/2;	477.32
sec. 4, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	643.74
sec. 6, lots 1 to 7, inclusive, S1/2NE1/4, SE1/4NW1/4, E1/2SW1/4, and SE1/4.	611.15
Total	4,708.61
Rounded Total	4,709

PRIVATE	
T. 1 S., R. 42 E.,	
sec. 15, All;	640
sec. 17, All;	640
sec. 19, lots 1 to 4, inclusive, E1/2, and E1/2W1/2;	617.21
sec. 21, All;	640
sec. 29, All;	640
sec. 31, lots 1 to 4, inclusive, E1/2, and E1/2W1/2;	615.84
sec. 33, All;	640
sec. 35, All.	640
T. 2 S., R. 42 E.,	
sec. 3, lots 1 to 6, inclusive, S1/2NE1/4, SE1/4NW1/4, NE1/4SW1/4, and N1/2SE1/4;	462.14
sec. 5, lots 1 to 4, inclusive, S1/2N1/2, and S1/2;	641.17
sec. 7, lots 1 to 4, inclusive;	163.23
sec. 9, lots 1 to 4, inclusive.	166.55
Total	6,506.13
Rounded Total	6,506

STATE COMMITTED	
T. 1 S., R. 42 E.,	
sec. 16, All.	640
Tract Total	11,854.74
Rounded Tract Total	11,855

DOWNEY COULEE

The Downey Coulee tract is located eight miles south of Colstrip, Montana. The land is currently used for ranching and a small portion as cropland.

COAL DATA

The tract contains 11,855 acres with 199.3 million tons of recoverable coal. The economically recoverable seams of subbituminous coal in the tract are the Sawyer, averaging 21.2 feet in thickness; the Knobloch, averaging 10.3 feet in thickness and the Rosebud, averaging 10.0 feet in thickness. The Knobloch is the seam of economic interest.

The nearest active mine is the Big Sky Mine located five miles to the north.

SITE-SPECIFIC ANALYSIS

Minerals

There have been three oil and gas wells drilled within the tract. All three wells were dry. The area is classified as having low oil and gas potential. Scoria is present and would be destroyed unless set aside for future use. Paleontological material is probably insignificant. There is no known valuable paleontological material within the tract.

Wildlife

There are no known threatened or endangered species on the tract except for one golden eagle nest, which is over private coal. A sharp-tailed grouse lek north of the tract could be disturbed by mine activity. A portion of the nesting area surrounding this lek is suitable for leasing with mitigation.

Cultural Resources

A total of 6,923 acres of the tract have been inventoried to a Class III level. There have been 29 sites identified. Mining would destroy all sites within the tract. A 100% inventory of the tract would have to be done prior to mine plan submission. Sites which qualify under the American Indian Religious Freedom Act may occur on this tract.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Visual Resources Management

The southern half of the tract is classified as Class B scenery, while the northern half is Class C. The Class B scenery is rugged and has dense stands of conifers, meadows, outcrops of scoria and sandstone bluffs that range from 3,400 feet to 4,100 feet in elevation. Mining would destroy this visual resource.

Water

Mining the tract would destroy five springs. All stream channels are ephemeral. The existing drainage patterns of the tract would be interrupted during the life of the mine. After mining, the backfill material placed back into the pit would elevate the TDS concentrations in any groundwater.

Agriculture

The tract contains 2,769 acres suitable for cropland with 64 currently used as cropland. The balance of the acreage is used as rangeland, which currently produces 2,682 AUMs annually. If the area is mined, the acreage would be lost for the term of mining and reclamation operations.

Economic/Social

Construction and operation of a mine on this tract would not result in any significant impacts upon services and the economy of Colstrip and Rosebud County. The county would receive additional tax revenue from coal development. The area population is tied to the existing mine and electrical generation facilities present, so the existing lifestyle would not be impacted except for a small increase in the work force.

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effect of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere.

A report prepared by PEDCo for the BLM indicates that mining on this tract could cause the 24-hour level of total suspended particulates to reach 294 micrograms per cubic meter in 1990, 198 in 1995, and 362 during the life of the mine. The 1990 and mine life levels would exceed Montana standards, as well as federal secondary and primary standards; the 1995 level would exceed the federal secondary standard.

Recreation

The impact from mining would extend off-site because of the influx of mine workers; thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
DOWNEY COULEE

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Sawyer-subbituminous, 8,677 BTUs/lb, sulfur, 0.332%; ash, 5.97% Knobloch-subbituminous, 9,080 BTUs/lb, sulfur, 0.517%; ash, 6.39% Rosebud-subbituminous, 8,419 BTUs/lb, sulfur, 1.4%; ash, 9.07%		USGS
Coal Quantity	Recoverable - 199.3 million tons (includes state leased coal)		BLM
Tons per Acre Disturbed	18,800 tons		BLM
Ratio of Recovered BTUs	1.28 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 240 BTUs produced		BLM
Transportation	Existing railroad, 5 miles to link		BLM
Bypass Potential	Not applicable		
Later Delineation Potential (1982 holdovers)	Not applicable		
Expansion of Existing Mines	Not applicable		
Inclusion of State Lands	Leased		Montana Dept. of State Lands

Impacts to the Natural Environment

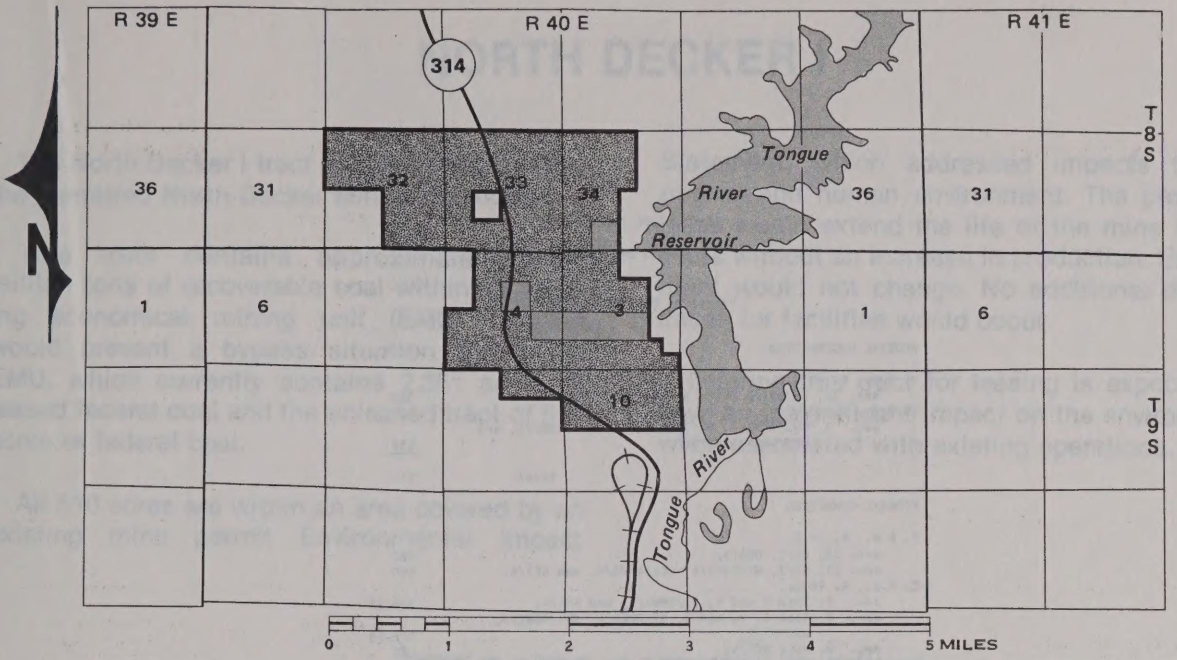
Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	One golden eagle nest, no known threatened or endangered species	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 11% good, 34% fair, 55% poor, fair to poor reclamation potential. Class B scenery in southern half of tract.	Alteration of soil structure, porosity, chemical properties and organics. Destruction of Class B scenery.	High
Water Quality/Quantity			
Surface	Ephemeral streams	Diversion of stream channels, interruption of flows	Low
Ground	5 springs	Destruction of springs	Low

DOWNEY COULEE, Page 2

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Potential violation of Mont. 24-hour standard and of federal secondary and primary standards in 1990, of federal secondary standard in 1995, of all three during life of mine.	Moderate
Cultural Resources	29 sites identified, inventory incomplete. Religious sites may be present	Destruction of all sites	High

Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 6,042 acres Owner 2 - 3,217 acres Owner 3 - 368 acres Owner 4 - 641 acres	Owners either declined to state their preference or were in favor of coal leasing	Moderate to low
Agricultural Productivity	2,682 AUMs produced annually	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Lifestyle of community already associated with mining activities	None expected	Low
Local Community Services	Services available locally	None expected	Low
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan amendment of 1982		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Tongue River Reservoir
Tongue River
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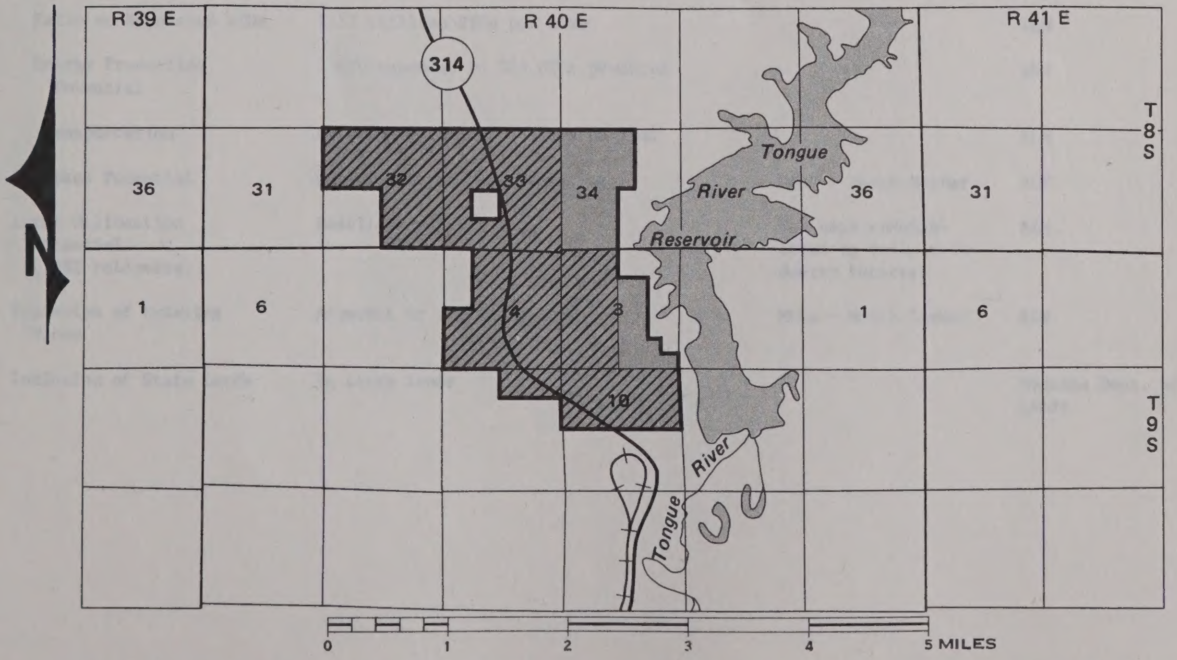
5 MILES

Surface Ownership

- ▒ Federal
- ■ State (none on this map)
- ░ Private

Coal Ownership

- ▒ Federal
- ■ State (none on this map)
- ░ Private (none on this map)
- ▨ Committed Federal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R 40 E
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T 8 S
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31
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10
Tongue River Reservoir
Tongue River
0
1
2
3
4
5 MILES

North Decker I

TRACT LEGAL DESCRIPTION

NORTH DECKER I

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 8 S., R. 40 E.,	
sec. 34, W1/2W1/2 NE1/4 and W1/2.	360
T. 9 S., R. 40 E.,	
sec. 3, SW1/4NE1/4, W1/2SE1/4, W1/2SE1/4SE1/4, and SE1/4SE1/4SE1/4.	150
Total	510
FEDERAL COMMITTED	
T. 8 S., R. 40 E.,	
sec. 32, N1/2, SE1/4;	480
sec. 33, N1/2, W1/2SW1/4, SE1/4SW1/4, and SE1/4.	600
T. 9 S., R. 40 E.,	
sec. 3, lots 3 and 4, S1/2NW1/4, and SW1/4;	320.27
sec. 4, lots 1, 2, and 3, S1/2NE1/4, SE1/4NW1/4, and S1/2;	560.48
sec. 9, N1/2 NE1/4;	80
sec. 10, N1/2.	320
Total	2,360.75
Rounded Total	2,361
Tract Total	2,870.75
Rounded Tract Total	2,871

NORTH DECKER I

The North Decker I tract is located adjacent to the permitted North Decker Mine extension.

This tract contains approximately 14.02 million tons of recoverable coal within an existing economical mining unit (EMU). Leasing would prevent a bypass situation within the EMU, which currently contains 2,361 acres of leased federal coal and the unleased tract of 510 acres of federal coal.

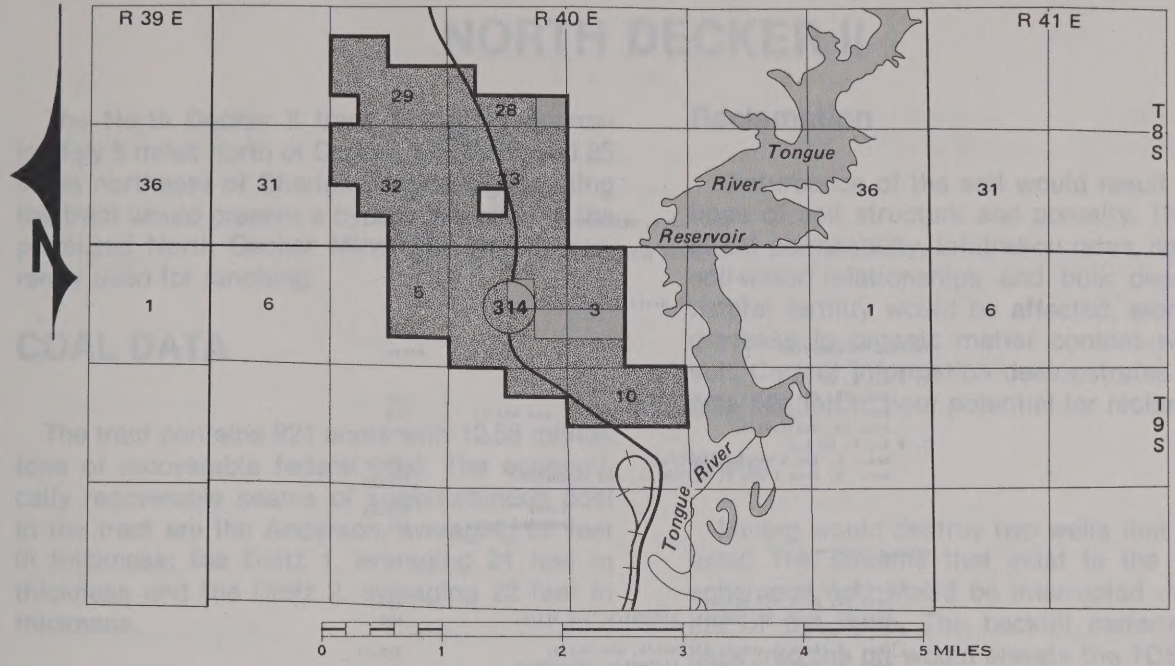
All 510 acres are within an area covered by an existing mine permit Environmental Impact Statement, which addressed impacts to the natural and human environment. The proposed lease would extend the life of the mine for six years without an increase in production. Employment would not change. No additional disturbances for facilities would occur.

Offering this tract for leasing is expected to have an insignificant impact on the environment when associated with existing operations.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
NORTH DECKER I

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Dietz 1-subbituminous, 9,733 BTUs/lb, sulfur, 0.42%; ash, 4.13% Dietz 2-subbituminous, 9,345 BTUs/lb, sulfur, 0.42%; ash, 5.15%		Decker Coal Company
Coal Quantity	Recoverable - 14.02 million tons		BLM
Tons per Acre Disturbed	31,900 tons		BLM
Ratio of Recovered BTUs	1.52 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 224 BTUs produced		BLM
Transportation	Existing railroad, 0 miles to link		BLM
Bypass Potential	Mine permitted, not producing	Mine - North Decker	BLM
Later Delineation Potential (1982 holdovers)	Redelineated	Has been redelineated to reflect industry interest	BLM
Expansion of Existing Mines	Adjacent to permitted mine	Mine - North Decker	BLM
Inclusion of State Lands	No state lands		Montana Dept. of State Lands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R 40 E
R 41 E
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T 9 S
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314
3
1
6
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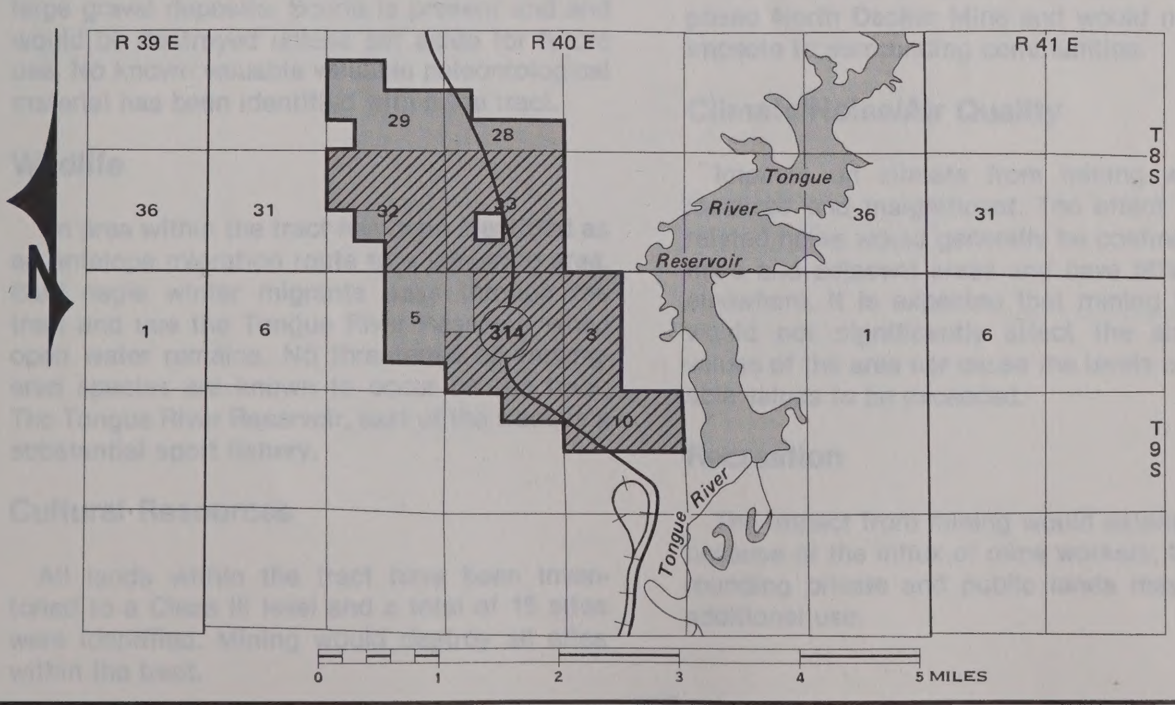
Tongue
River
Reservoir
Tongue River
0
1
2
3
4
5 MILES

Surface Ownership

▒ Federal
▓ State (none on this map)
░ Private

Coal Ownership

▒ Federal
▓ State (none on this map)
░ Private (none on this map)
▨ Committed Federal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10
Tongue
River
Reservoir
Tongue River
0
1
2
3
4
5 MILES

North Decker II

TRACT LEGAL DESCRIPTION

NORTH DECKER II

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 8 S., R. 40 E.,	
sec. 28, NW1/4SW1/4 and S1/2S1/2;	200
sec. 29, S1/2NW1/4, N1/2SW1/4, SE1/4SW1/4, and SE1/4;	360
sec. 32, NE1/4SW1/4.	40
T. 9 S., R. 40 E.,	
sec. 4, lot 4 and SW1/4NW1/4;	80.24
sec. 5, lots 1 and 2, S1/2NE1/4, and N1/2SE1/4.	240.41
Total	920.65
Rounded Total	921

FEDERAL COMMITTED	
T. 8 S., R. 40 E.,	
sec. 32, N1/2 and SE1/4;	480
sec. 33, N1/2, NW1/2SW1/4, S1/2SW1/4, and SE1/4.	600
T. 9 S., R. 40 E.,	
sec. 3, lots 3 and 4, S1/2NW1/4, and SW1/4;	320.27
sec. 4, lots 1, 2, and 3, S1/2NE1/4, SE1/4NW1/4, and S1/2;	560.48
sec. 9, N1/2NE1/4;	80
sec. 10, N1/2.	320
Total	2,360.75
Rounded Total	2,361
Tract Total	3,281.4
Rounded Tract Total	3,281

NORTH DECKER II

The North Decker II tract is located approximately 5 miles north of Decker, Montana, and 25 miles northeast of Sheridan, Wyoming. Leasing the tract would present a bypass situation in the permitted North Decker Mine. The land is currently used for ranching.

COAL DATA

The tract contains 921 acres with 12.58 million tons of recoverable federal coal. The economically recoverable seams of subbituminous coal in the tract are the Anderson, averaging 57 feet in thickness; the Dietz 1, averaging 21 feet in thickness and the Dietz 2, averaging 22 feet in thickness.

The nearest active mines are the West Decker Mine located 1.5 miles to the south, the East Decker Mine located 2 miles to the southwest and the Spring Creek Mine located 3 miles to the northwest.

SITE-SPECIFIC ANALYSIS

Minerals

No oil and gas wells have been drilled within the tract. The production potential is low. There are no known valuable locatable minerals or large gravel deposits. Scoria is present and and would be destroyed unless set aside for future use. No known valuable valuable paleontological material has been identified within the tract.

Wildlife

An area within the tract has been identified as an antelope migration route to a wintering area. Bald eagle winter migrants pass through the tract and use the Tongue River Reservoir when open water remains. No threatened or endangered species are known to occur on the tract. The Tongue River Reservoir, east of the tract, is a substantial sport fishery.

Cultural Resources

All lands within the tract have been inventoried to a Class III level and a total of 15 sites were identified. Mining would destroy all sites within the tract.

Reclamation

Disturbance of the soil would result in alterations of soil structure and porosity. This would affect permeability, infiltration rates, soil-air and soil-water relationships and bulk density. The natural fertility would be affected, along with a decrease in organic matter content within the soil. Current information demonstrates that this area has fair to poor potential for reclamation.

Water

Mining would destroy two wells that currently exist. The streams that exist in the tract are ephemeral and would be interrupted during the life of the mine. The backfill material placed back into the pit would elevate the TDS concentrations in the groundwater of the area.

Agriculture

The tract contains 192 acres suitable for cropland, with none currently cropped. The entire tract currently produces 193 AUMs annually. The acreage would be lost for the term of mining and reclamation operations.

Economic/Social

The tract would extend the life of the proposed North Decker Mine and would not cause impacts to surrounding communities.

Climate/Noise/Air Quality

Impacts on climate from mining would be localized and insignificant. The effect of mine-related noise would generally be confined to the mine and adjacent areas and have little impact elsewhere. It is expected that mining the tract would not significantly affect the air quality values of the area nor cause the levels of acceptable values to be exceeded.

Recreation

The impact from mining would extend off-site because of the influx of mine workers; thus, surrounding private and public lands may receive additional use.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
NORTH DECKER II

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Anderson-subbituminous, 9,574 BTUs/lb, sulfur, 0.25%; ash, 4.53% Dietz 1-subbituminous, 9,733 BTUs,1b, sulfur, 0.42%; ash, 4.13% Dietz 2-subbituminous, 9,345 BTUs/lb, sulfur, 0.42%; ash, 5.15%		Decker Coal Company
Coal Quantity	Recoverable - 12.58 million tons		BLM
Tons per Acre Disturbed	18,300 tons		BLM
Ratio of Recovered BTUs	3.38 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 253 BTUs produced		BLM
Transportation	Existing railroad, 2 miles to link		BLM
Bypass Potential	Mine permitted, not producing	North Decker Mine	BLM
Later Delineation Potential (1982 holdovers)	Redelineated	Has been redelineated to reflect industry interest	BLM
Expansion of Existing Mines	Adjacent to permitted mine	North Decker Mine	BLM
Inclusion of State Lands	No state lands		Montana Dept. of State Lands

Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Wildlife	Antelope migration area, bald eagle migration through the area, fisheries below tract in Tongue River Reservoir	Habitat destruction, increased poaching and disturbance.	Low
Reclamation Potential	Soils rated: 3% good, 87% fair, 16% poor, fair to poor reclamation potential.	Alteration of soil structure, poroeity, chemical properties and organics.	High
Water Quality/Quantity			
Surface	Ephemeral streams	Diversion of stream channels, interruption of flows, increased TDS and suspended solids	Low

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Water Quality/Quantity (continued)			
Ground	Wells	Destruction of wells, dewatering of groundwater, increased TDS	Low
Air Quality	Excellent	Increase in total suspended particulates	Low
Cultural Resources	Sites identified	Destruction of all sites	High

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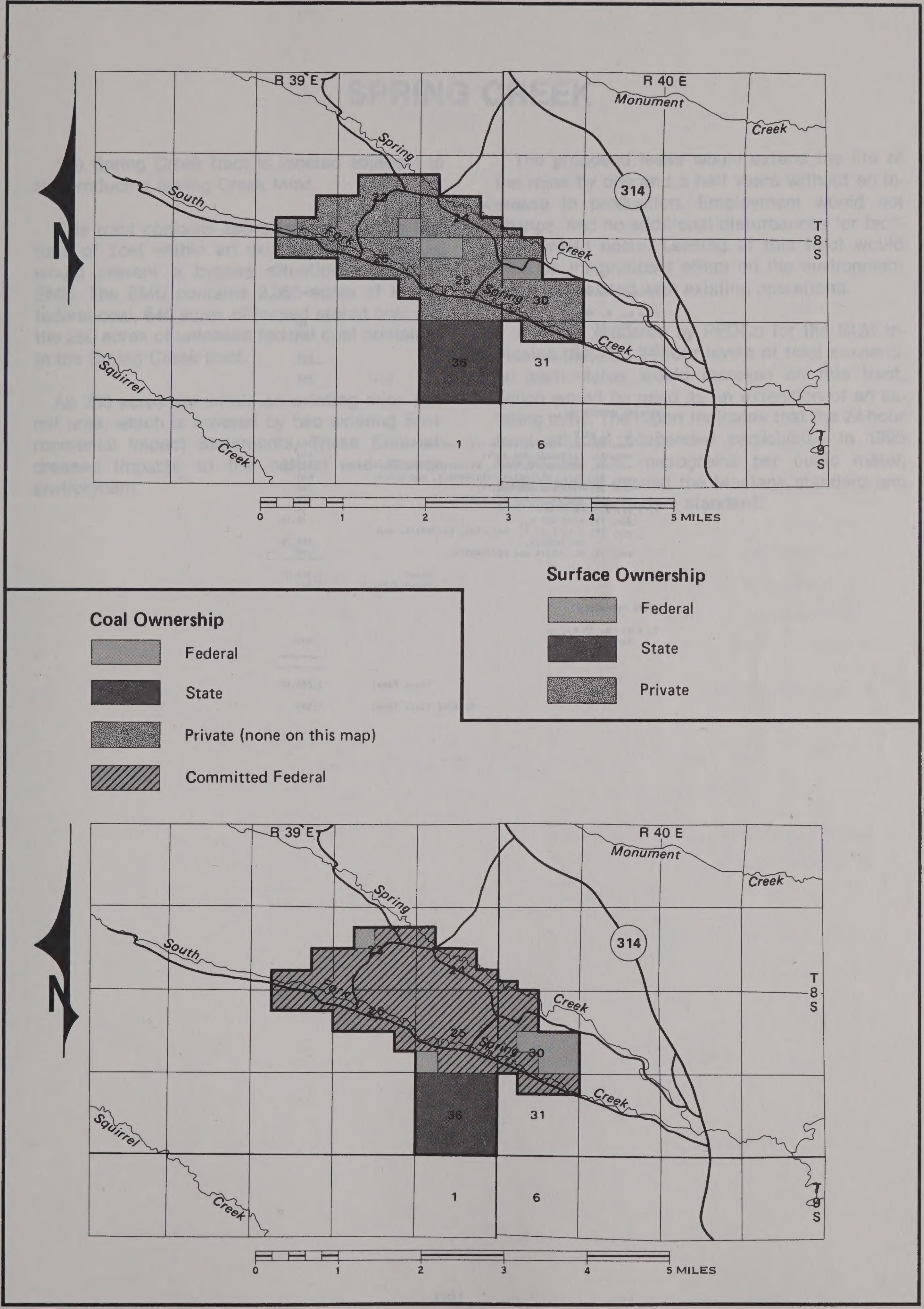
Social and Economic Impacts

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Disruption of Family Farms/Ranches	Owner 1 - 881 acres	Energy-related landowner, little impact	Low
Agricultural Productivity	193 AUMs	Interruption of agricultural activity during mining operations	Low
Rural Quality of Life	Lifestyle of community already associated with mining activities	None expected	Low
Local Community Services	Services available locally	None expected	Low
Consistency with Other Plans and Policies	Powder River Resource Area Management Framework Plan update of 1979		


R 39 E
R 40 E
Monument
Creek
Spring
South
Fork
Creek
Spring
Creek
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9
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Squirrel
Creek
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3
4
5 MILES
Surface Ownership
Federal
State
Private
Coal Ownership
Federal
State
Private (none on this map)
Committed Federal

Spring Creek

TRACT LEGAL DESCRIPTION

SPRING CREEK

Principal Meridian, Montana

FEDERAL UNCOMMITTED	Acres
T. 8 S., R. 39 E.,	
sec. 23, SE1/4NW1/4;	40
sec. 25, SW1/4SW1/4.	40
T. 8 S., R. 40 E.,	
sec. 30, NE1/4SW1/4 and SE1/4.	200
Total	280

FEDERAL COMMITTED	
T. 8 S., R. 39 E.,	
sec. 22, SE1/4SW1/4, E1/2SE1/4, and SW1/4SE1/4;	160
sec. 23, S1/2NE1/4 and S1/2;	400
sec. 24, SW1/4NW1/4, SW1/4, W1/2SE1/4, and SE1/4SE1/4;	320
sec. 25, N1/2, N1/2SW1/4, SE1/4SW1/4, and SE1/4;	600
sec. 26, N1/2 and NE1/4SE1/4;	360
sec. 27, N1/2NE1/4 and NE1/4NW1/4.	120
T. 8 S., R. 40 E.,	
sec. 19, S1/2 lot 4;	18.25
sec. 30, lots 1 to 4, inclusive, E1/2NW1/4, and SE1/4SW1/4;	266.76
sec. 31, N1/2NE1/4 and NE1/4NW1/4.	120
Total	2,365.01
Rounded Total	2,365

STATE COMMITTED	
T. 8 S., R. 39 E.,	
sec. 36, all.	640
Tract Total	3,285.01
Rounded Tract Total	3,285

SPRING CREEK

The Spring Creek tract is located adjacent to the producing Spring Creek Mine.

This tract contains approximately 10.6 million tons of coal within an existing EMU. Leasing would prevent a bypass situation within the EMU. The EMU contains 2,365 acres of leased federal coal, 640 acres of leased stated coal and the 280 acres of unleased federal coal contained in the Spring Creek tract.

All 280 acres are within an existing mine permit area, which is covered by two existing Environmental Impact Statements. These EISs addressed impacts to the natural and human environment.

The proposed lease would extend the life of the mine by one and a half years without an increase in production. Employment would not change, and no additional disturbances for facilities would occur. Leasing of this tract would have an insignificant effect on the environment when associated with existing operations.

A report prepared by PEDCo for the BLM indicates that the 24-hour levels of total suspended particulates would increase on this tract, which would be used as an extension of an existing mine. The report indicates that the 24-hour level of total suspended particulates in 1995 would be 209 micrograms per cubic meter, which would exceed the Montana standard and the federal secondary standard.

SUMMARY OF RESOURCE AND ENVIRONMENTAL CONSIDERATIONS
SPRING CREEK

Coal Resource Data

Tract Ranking Subfactors	Present Situation	Comments	Information Source
Economic Viability			
Coal Quality	Anderson plus Dietz 1 and Dietz 2 - subbituminous, 9,407 BTUs/lb, sulfur, 0.33%; ash, 3.63%		USGS, Montana Dept. of State Lands
Coal Quantity	Recoverable - 258.8 million tons (includes state leased coal)		BLM
Tons per Acre Disturbed	87,700 tons		BLM
Ratio of Recovered BTUs	2.66 trillion BTUs per acre		BLM
Energy Production Potential	1 BTU expended to 224 BTUs produced		BLM
Transportation	Existing railroad, 0.5 miles to link		BLM
Bypass Potential	Producing mine	Spring Creek Mine	BLM
Later Delineation Potential (1982 holdovers)	Redelineated	Has been redelineated to reflect industry interest	BLM
Expansion of Existing Mines	Adjacent to permitted mine	Spring Creek Mine	BLM
Inclusion of State Lands	Leased		Montana Dept. of State Lands

Impacts to the Natural Environment

Tract Ranking Subfactors	Present Situation	Anticipated Effect of Leasing/Development	Significance of Anticipated Impact
Air Quality	Excellent	Potential violation of Mont. 24-hour standard and of federal secondary 24-hour standard in 1995.	Moderate

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